SONOGRAPHIC PREVALENCE OF GALLSTONE AMONG ADULT SUBJECTS IN NNEWI ANAMBRA STATE, NIGERIA

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ABSTRACT

Gallbladder stones are sometimes silent disease and often neglected, and could cause life threatening medical complications when it manifests clinically.

The aim of this study is to determine the prevalence of gallbladder stone in the adult population of Nnewi, Anambra State, Nigeria.

A cross sectional study was conducted during a period of 34 months; from June, 2011 to April, 2014. A convenience sample of 3501 consecutive consenting subjects who met the inclusion criteria was evaluated. Ultrasound examination was carried out on each participant with special emphasis on the biliary system, and the presence or otherwise of gallstone was documented. The weight of each participant was measured with a simple bathroom weighing balance. With each participant barefooted and standing in Frankfurt position, their heights were measured using a meter rule. Body mass index was calculated from the weight and height measurements. The age of each subject was recorded.

Participants were aged between 18 and 92 years; 49.4% males (n = 1731) and 50.6% females (n = 1770). Only 4.4% of the subjects (n = 154) had gallstones. Twenty-seven percent (n = 41) of the subjects with stone were men, whereas 73% (n = 154) of the subjects with stones were women. Body mass index (BMI) was identified as the most prominent factor of gallstone formation, with obese subjects having greatest gallstone prevalence. Incidence according to age showed no

definite pattern. About 27% of the total gallstone incidents was symptomatic, only slightly above five percent

was associated with cholecystitis. Generally, low prevalence rate of gallstone was noted within the studied population.

The study showed that there is low prevalence of gallstone among adult population in Nnewi, Nigeria. It also revealed that increasing BMI value and sex appear to be risk factors for gallstone occurrence.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Biliary diseases are the major cause of right upper quadrant pains. Other causes are diseases of the liver, porta hepatis, pancreas, right kidney, adrenal gland, and the right lung. The gallbladder is a pear-shaped fluid-filled structure located in a shallow fossa called gallbladder fossa, which lies at the junction between the right and left hepatic lobes.

An average adult gallbladder is 7cm long and can hold up to 50 ml of bile (Keith et al., 2010). It has three different parts; the fundus, body and neck. The fundus is generally the most caudal and anterior in position, often projecting below the anterior margin of the liver. The gallbladder has a smooth thin wall which is about 2mm thick; with the thickest part in its neck region which measures about 3mm in thickness (Satish, 2007). The gallbladder wall is composed of an outer serosal layer, a middle fibromuscular layer and an innermost mucosa.

The sonographic appearance of the gallbladder is very distinct, especially after a long fasting period. Large accumulation of bile makes it well distended and appears clearly cystic thereby enabling easier location and identification of any pathology. Ruling out gallstone is perhaps the most common indications for a right upper quadrant scan (Roger, 1998). Gallstones are aggregated precipitates that

form in the biliary tract, usually in the gallbladder (figures 2 and 3). Gallbladder stone is also called cholelithiasis. Gallstones develop insidiously and may remain asymptomatic for decades. Biliary colic is the most common presenting symptom of gallstone disease. The pain does not wax and wane, rather, it is felt as a steady, severe aching or pressure-type sensation. Usually the pain is felt in the epigastrium or right upper quadrant and often radiates to the right infrascapular area. Biliary colic is thought to be due to sudden obstruction of the cystic duct by a calculus which produces increased intraluminal pressure and distention of the gallbladder leading to a visceral-type pain. Discrete attack may be precipitated by a fatty meal, or may occur at any time of the day or night. The frequency of episode may vary from weeks to years.

Plain abdominal radiography is the simplest and oldest radiological procedure for gallbladder stone investigation and diagnosis. However, the concentration of calcium is only sufficient to make gallbladder radiopaque in about 10 to 15 % of the patients (Satish, 2007). Oral cholecystogram (Grahamcole test) later replaced the use of plain abdominal radiographs but this has long been replaced by ultrasound. Ultrasound is simple; safer, quicker and more accurate than x-ray in addition to providing the opportunity to examine more than just the gallbladder. Its characteristic positive findings typical of gallstone disease include

stones, thickening of the gallbladder wall, pericholecystic fluid, and a positive Murphy sign on from pressure of the ultrasound probe.

Although somewhat less accurate than computed tomography, ultrasonography provides quick, inexpensive and reproducible method of examining the biliary system. The safety of ultrasound has often been questioned but after four decades of use on over three generations it has been declared a low risk examination (Salvesen, 2002).The numerous studies of both functional and morphologic ultrasonic biological effects, seeking adverse effects on humans have failed to define any significant problems. This was declared by the Bioeffect Committee of American Institute of Ultrasound in Medicine (AIUM) in the year 1997. The committee stated that no confirmed biological effects on patients or instrument operator caused by exposure at intensities typical of present diagnostic ultrasound instruments have been reported. Although the possibility exists that such biological effects may be identified in the future, current data indicate that the benefits to the patients of prudent use of diagnostic ultrasound outweighs the risk, if any, that may be present. At present, the known risk of use of ultrasound in medicine is wrong or inaccurate diagnosis by poorly trained personnel manning the equipment.

Gallstone disease has far reaching consequences for the patient if undetected and treated appropriately. It is therefore important that its prevalence among adults

in a densely populated and vibrant town like Nnewi is established. This is to give sonographers an indication of what level of suspicion they should have for patients presenting for abdominal ultrasound in the locality. There are no published data to rely on regarding the prevalence of the disease in this locality, as statistics relied upon here are derived from studies on Caucasian populations, and very few in the Western Nigeria. The aim of this study therefore is to establish the prevalence of the gallstones among adult subjects in Nnewi, Anambra State, Nigeria.

1.2 Statement of Problem

Gallstone disease is often insidious and could at times present with life threatening conditions. Presence of stone in the gallbladder may lead to acute cholecystitis while presence of stones in other parts of the biliary tract can cause obstruction of the bile duct, which can lead to serious condition such as ascending cholangitis or pancreatitis. Either of these two conditions can be life threatening and therefore are considered medical emergencies.

Gallstone incidences vary from population to population as its occurrence is influenced by genetic characteristics of the population and prevailing environmental factors. Having reliable epidemiological statistics on gallstone about a population helps clinicians and sonographers with certain degrees of suspicion of gallstone in patients presenting with right upper quadrant pain. To the best of the researcherôs knowledge, there are no epidemiological data on gallstone disease on

adult subjects in Nnewi, Anambra State. Clinicians and sonographers here, rely on data obtained from Caucasian population and other Negro population even when there are possibilities that this incidence may not be the same with our local population.

1.3 Objectives of the Study

This study was aimed at determining the prevalence of gallstone among adult subjects in Nnewi, Anambra State, Nigeria.

Specific Objectives: The specific objectives are as follows:

1. To establish the prevalence of gallstone with respect to sex, age, parity and body mass index;
2. To determine the percentage of the total gallstone that is symptomatic and those associated with cholecystitis;
3. To establish the proportion of the solitary and multiple stones in the population; and,
4. To compare the established prevalence with that of the Caucasians.

1.4 Significance of the Study

The result of the study will provide adequate statistical information on gallstone incidence amongst adult subjects in Nnewi, Anambra State, Nigeria. The result will provide data on prevalence of gallstone in Nnewi and by extension its environs and Southeastern Nigeria in general.

1.5 Scope of the Study

The study was confined to adult subjects from the four communities comprising Nnewi town, Anambra State. The subjects were volunteers recruited at various locations within the communities and who expressed willingness to be part of the study. The study did not include subjects from towns other than Nnewi or subjects below 18 years of age. The study lasted for a period of 34 months; starting from June, 2011 and ending in April, 2014.

1.6 Definition of Operational Terms

Cholelithiasis: A medical condition in which stones accumulate in the gallbladder.

Biliary: An adjective referring to anything that concerns the gallbladder and production of bile.

Biliary colic: Painful sensation originating from the biliary system due to inflammation or presence of stone in the biliary system.

Cholangitis: Inflammation of the bile ducts mainly due to bacterial invasion.

Cholecystitis: An inflammatory condition characterized by retention of bile in the gallbladder and often secondary to infection by intestinal microorganisms.

Choledocholithiasis: A medical condition in which stone is found in the bile duct.

Murphy's sign: Tenderness felt when an inflamed gallbladder is palpated clinically, usually in deep inspiration.

Ultrasonography: Diagnostic procedure in medicine that involves the use of devices that produces very high frequency sound waves to examine the internal body organs (Sanders, 1998).

Transducer: A device in ultrasound equipment that is capable of transmitting and receiving high frequency sound waves (Sanders, 1998).

Sonographic appearance: Characteristic appearance of normal and diseased tissues, organs, and systems at sonography.

Cyst: A term used to describe fluid filled structure that appears dark in ultrasound image.

Asymptomatic: A medical condition showing no symptoms.

Oral cholecystogram: The radiological procedure in which the gallbladder is demonstrated on a radiograph following oral intake of a contrast medium.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Gallstones are precipitates that form in the biliary system, usually in the gallbladder. They constitute one of the most common biliary pathologies globally. They vary in size and shape from as small as a grain of sand to as large as a golf ball. They may occur as a single large stone or many small ones. Many studies on gallstone disease are hereby reviewed to form the basis of this study.

2.2 Anatomy of gallbladder

The gallbladder is a pear-shaped fluid-filled structure located in a shallow fossa called gallbladder fossa, which lies at the junction between the right and left hepatic lobes. An average adult gallbladder is 7cm long and can hold up to 50 ml of bile (Moore et al., 2010). It has three different parts; the fundus, body and neck. The fundus is generally the most caudal and anterior in position, often projecting below the anterior margin of the liver. The gallbladder has a smooth thin wall which is about 2mm thick; with the thickest part in its neck region which measures about 3mm in thickness (Satish, 2007). The gallbladder wall is composed of an outer serosal layer, a middle fibromuscular layer and an innermost mucosa.

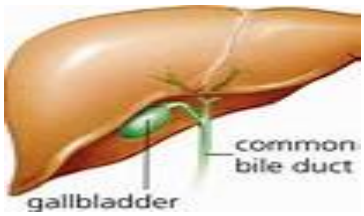

Figure 1: Gross anatomical location of the gallbladder in its fossa under the right hepatic lobe.

2.3 Pathogenesis of Gallstone

There are three types of gallstone. They are pure cholesterol stones which contain at least 90% cholesterol, pigment stones, either brown or black which contain at least 90% bilirubin and mixed composition stones which contain varying proportions of cholesterol, bilirubin and other substances such as calcium carbonate, calcium phosphate and calcium palmate (LLõChenko, 2004). Brown pigment stones are mainly composed of calcium bilirubinate whereas bilirubin, calcium and/or tribasic phosphate are the main constituents of black pigment stones (LLõChenko, 2004).

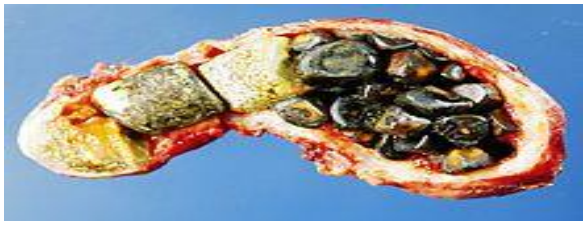

Figure 2: A cut section of the gallbladder showing multiple stones

In Western societies and in Pakistan more than 70% of gallstones are composed primarily of cholesterol, either pure or mixed with pigment,

mucoglycoprotein, and calcium carbonate (Kurtin et al., 2000). The epidemiological risk factors for cholesterol gallstone formation are age, gender, diet, obesity, decreased physical activity, rapid weight loss and use of oral contraceptives (Roglans et al., 2004).

In their study Bar et al. (2004) established that the additional factors for nucleation are reduced antinucleating factors and gallbladder hypomotility which along with mucin may contribute to aggregation of crystals and hence to the formation of gallstones.

In the case of pigment gallstone, a study revealed that excess bile pigment production due to haemolytic anemia may lead to pigment precipitation which in addition to mucin leads to aggregation and later, gallstone formation (Stewart et al., 2002). On the other hand, Moor, (1990) confirmed that calcium salts of bilirubin and carbonate are more soluble at low pH and gallbladder do not only concentrate bile, but also acidifies it. The acidification of bile reduces the risk of gallstone formation.

2.4 Clinical Manifestation of Gallstones

A study by Bilhartz and Horton (2003) was able to establish that 80% of people harboring gallstones are asymptomatic at any giving point in time, and also that approximately 20% of this patients will become symptomatic over a 10-15 years period. When symptomatic, cholelithiasis presents with severe right upper

quadrant pains. The pain does not wax and wane, rather, it is felt as a steady, severe aching or pressure-type sensation. Usually the pains are felt in the epigastrium or right upper quadrant and often radiates to the right infrascapular area. Biliary colic is thought to be due to sudden obstruction of the cystic duct by a calculus which produces increased intraluminal pressure and distention of the gallbladder, leading to a visceral-type pain. Discrete attack may be precipitated by a fatty meal, or may occur at any time of the day or night. The frequency of episode may vary from weeks to years.

Recurrent pain attacks occur in up to 50% of patients and the risk of a more significant complication is estimated to be 1-2% per year (Johnston et al., 1993). Persistent obstruction of the cystic duct, in contrast to the transient obstruction that produces biliary colic results in acute cholecystitis. Acute inflammation of the gallbladder is caused by calculous obstruction of the cystic duct in greater than 90% of cases (Johnston et al., 1993).

2.5 Complications of Gallstones

Gallstones may be asymptomatic, even for years (known as silent stones), and do not require any treatment (Heuman and Milas, 2010). Symptoms usually begin to appear when the stone get to about 8mm and above in diameter. Whereas small stones can easily pass through the common bile duct into the duodenum, some are too large for this passage and cause obstruction of the common bile duct, a

condition known as choledocholithiasis. In their study, Bilhartz and Horton (2003) went on to establish that choledocholithiasis occurs in 20% of patients with gallstones. Most often this causes jaundice and subsequent liver cell damage. A positive Murphyôs sign is a common finding on physical examination. Jaundice of the skin, eye, or clay-colored stool should always raise suspicion of choledocholithiasis. Choledocholithiasis could also degenerate to acute pancreatitis or even ascending cholangitis.

In many instances, gallstones have been implicated to be the cause of gallbladder cancer. Cohort studies (Kurtin et al,. 2000) suggest that patients with symptomatic stones develop gallbladder cancer at higher rate than do patients with asymptomatic gallstones.

2.6 Risk and Protective Factors of Gallstone Development

Researchers have been able to establish that the pathogenesis of gallstone disease is multifactorial. Quite a number of factors have been implicated as being responsible for the development of gallstone. These factors include; parity, estrogen replacement therapy, oral-contraceptive use, and rapid weight loss (Attili et al., 1997). Others such as age, sex, etnicity, obesity, type 2 diabetes, dyslipidaemia (hypertriglyceraemia), hyperinsulinaemia, hyperparathyroidism, sickle cell anemia, spinal cord injury, liver cirrhosis, cholestasis, cholecystitis, somatostatin, Downôs syndrome, Wilsonôs disease, sedentary lifestyle and diet also

cause gallstone formation (Shaffer, 2005). Some factors have as well been discovered to be protective against gallstone formation.

The incidence of gallstone according to age and sex was determined in the study by Sattish (2007), who affirmed that gallstones were about twice as common in women as in men. Going a step further, he stated that the sex incidence was roughly equal after the attainment of the age of 80 years. Moreover he established that gallstone was high among the diabetics (Sattish, 2007). However, the assertion by Sattish (2007) was supported by David and Jeremy (1995) who only differed slightly in the sex incidence. In their work David and Jeremy (1995) opined that the sex incidence was almost equal in the elderly but the sex incidence was at female to male ratio of 3: 1. From the foregoing, it is evident that gallstones are predominantly found amongst the middle aged and the elderly. Further findings by Sattish (2007) revealed that there is increased prevalence of gallstones in haemolytic disorders (especially spherocytosis), sickle cells anemia, thalassaemia, malaria, and mechanical destruction of red blood cells by prosthetic heart valves. In their study David and Jeremy (1995) was able to establish that 20% of patient with gallbladder stones have stones in the bile ducts as well.

The prevalence of cholesterol gallstones in obese persons was studied by Erlinger and Serge, (2000).The study revealed high risk among those with high body mass index value. Weight loss was also implicated in their study as it found

that relative weight loss of 24% of initial body weight, a rate of weight loss greater than 1.5kg per week has high chance of gallstone formation.

Diet on the other hand can work both as a risk factor as well as a protective factor against gallstone formation. Consumption of high calorie diet is a key factor in gallstone disease. Studies on the association between total fat intake and risk of cholesterol gallstone disease have reported either positive (Caroli-Bose et al., 1998) or non-significant conclusion (Maclure, 1989). A high intake of cis-unsaturated fats was associated with a low risk for gallstone disease in men (Tsai et al., 2004).

In an experimental study of gallstone patients by Gustafsson et al., (1997) vitamin C supplementation (2 g per day for two weeks) had induced changes in bile composition and prolongation of nucleation time, suggesting that vitamin C supplementation may also influence the conditions for cholesterol crystal formation in humans. Also, coffee affects several hepatobiliary processes that are involved in cholesterol gallstone formation. Coffee components stimulate cholecystokinin release (Douglas et al., 1990), decrease cholesterol crystallization in bile (Lillemoe et al., 1989), and perhaps increase intestinal motility (Brown et al., 1990). The results of these studies therefore show that coffee intake reduces the risk of gallstone disease. An experimental study on the effect of phosphatidylcholine enriched diet on gallstone incidence in mice susceptible to

cholelithiasis was carried out by Joelle et al.,(2003). Posphattidylcholine(PC) is a main cholesterol solubilizer in bile. An initial experiment revealed that feeding of the mice on a lithogenic diet for 4 weeks or 8 weeks resulted in cholesterol gallstone incidence of 47% and 87%, respectively. However, later experiment showed that these gallstone incidences were either reduced or prevented when the lithogenic diet was enriched with 2% or 6% phosphatidylcholin respectively.

2.7 Known Epidemiology of Gallstone

Approximately 10-15% of the adult population or more than 20 million people in the United States have gallstones (Bartoli and Capron, 2000). Consequent upon this 500,000 - 600,000 cholecystectomies are performed in the country annually, which add to annual estimated overall cost of more than five billion dollars in managing the disease (Schirmer et al., 2005). The above finding was corroborated by Shaffer (2005) who also added that in the United States approximately 1-3% of the general population develops gallstone and that about 1-3% become symptomatic annually. In Europe and North America (United States included) the incidence of gallstones is approximately 15% in the general population. This was established in the study of Bartoli and Capron (2000) who also deduced that 25% of the sufferers are women and 10-15% men, who are 50 years or more.

In Italy, a hospital based study conducted by Attili et al., (1995) established an overall prevalence rate of 11% in subjects between the ages of 18 and 65 years. Ultrasound examinations were repeated on the same patients at five years intervals. The ten year cumulative incidence of new gallstones was 4.6%. In the United Kingdom, 20-35% of women and 7-15% of men developed gallstones in 1988 (Grepco group, 1989).

The incidence of cholelithiasis in Pakistan is on the increase. In Southern Sindh, Pakistan, the overall surgical incidence for cholelithiasis was found to be 9.03% (90% Confidence Interval: 8.6-9.4), with females being 3.3 times more prone to develop gallstones compared to males (Channa et al., 2004). Also, Samra et al. (1988) reported that out of 400 pathological gallbladder, 320 (80%) had gallstones.

An epidemiological study carried out in Swedish population found out that the incidence of gallstone was 1.39 per 100 persons in a year (Halldestam et al., 2009). This study was conducted on randomly selected individuals. They re-examined 503 studied individuals after a minimum interval of 5 years and discovered that 8.3% (42/503) of the subjects that had no gallstones in the previous study had developed gallstones.

Moreover, in a study carried out on Peruvian coastal natives, it was discovered that gallstone disease was more common in females (16.1 cases per

100; 95% Confidence Interval: 13.8-18.2) than in males (10.7 per 100; 95% Confidence Interval: 8.0-13.4). Females had a greater risk of gallstone disease, especially if they had used oral contraception and/or had four or more children (Moroa et al., 2000).

In Chengdu, China, Hiu et al., (2009) carried out a research to investigate the risk factors for gallstone disease in the general population, and their findings revealed that among 3573 studied subjects 10.7% had gallstone disease. They also found higher incidence of gallstone among women (11.6%) than men (9.9%).Higher level of fasting plasma glucose among gallstone disease patients and higher gallstone disease among the obese subjects were also established.

In Africa, the prevalence of gallstone disease has been reported in only a few countries. For instance, in groups of antenatal women in different countries, the prevalence was; 2.1% in Nigeria (Akute et al., 1999), 4% in Tunisia (Abdel et al., 1999), 5.2% in Sudan (Leila et al., 2000), and 10% in black women of Soweto, South Africa (Walker et al., 1989). Moreover, a study in an Ethiopian population revealed that among a total of 1603 subjects studied, the proportion of patients with cholelithiasis was 5.2%, with male to female ratio of 2:1 (Assefa, 2008). In their work, Akute and Obajim (2002) established that the prevalence of gallstone in the general population in Ibadan, Nigeria was 1.7%, with male to female ratio of 1:3.

2.8 Ethnicity and gallstone Prevalence

Gallstone disease has been established to be endemic among people of some ethnic nationalities. For instance, the NHANES III survey confirmed that there is high prevalence of gallstone among Mexican-Americans than the non-Hispanic whites living in the United States (Everhart et al, 1999). Moreover, a study conducted on a Chilean population adduced that there is higher gallstone prevalence rate among the subpopulation of Mapuches as compare with those of Mestiros, Miquelet et al, (1998).

An epidemiological and family study carried by Frank et al., (2001) indicated that cholesterol gallstone formation is in part genetically determined. This was an animal studies involving cross-breeding experiments on inbred mouse strain that differ in genetic susceptibility to cholesterol gallstone formation. Increased frequency of gallstone was also discovered among the relatives of gallstone patients when compare with the families of control subjects, (Sarin et al, 1995). Ethnic bias in gallstone distribution among people of different population has raised suspicion among researchers and many researches have been conducted to estimate the role that ethnicity/genetics play in gallstone formation.

In one of such studies, Capocaccial et al. (1991) observed that there is existence of Ameriindian Lithogenic genes in Mexican-American race, and that it is probably the presence of this gene that is responsible for higher prevalence rate of gallstones among Mexican-Americans. In the earlier stated study in Chilean population Miquelet et al. (1998) also established that gallstone incidence was greater among Chileans with heritage of American admixture. With MtDNA analysis they established very high prevalence rate of gallstone among Chileans. They moreover noted that Chile rank among the highest mortality rate from gallbladder cancer in the world. These findings have highlighted the need for the

determination of gallstone prevalence rate among difference ethnic nationalities so as to estimate the risk status of each nationality, especially on the stones that are asymptomatic.

From the foregoing it is understandable that ethnicity and diet are critical factors of gallstone formation, causing the prevalence rate to vary among the ethnic components of any given population. To the best of the researcherôs knowledge, there is no known literature on epidemiological data on gallstone disease in South East Nigeria. Clinicians and sonographers here only rely on data obtained from Caucasian population and other Negro population even when there are possibilities that this incidence may not be the same with our local population. This study therefore aims at determining the prevalence of gallstone among adult subjects in Nnewi, Anambra State. Nnewi is a metropolitan city in south Eastern Nigeria with high concentration of Igbos (97%, 2001 National Census figure): They share the same ancestral origin, tradition/diet, language, Religion, and natural background, making it an appropriate place for carrying out this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

This was a cross sectional prospective study that targeted the adult population in Nnewi town. The participants consisted of volunteers who expressed willingness to take part in the study at the time they were approached for enlistment.

3.2 Duration of Study

The study lasted for 34 calendar months. It began in June, 2011 and ended in April, 2014.

3.3 Target Population

The target population for the study was all adult men and women of Igbo descent residing in Nnewi during the period of the study.

3.4 Sampling Technique

Cluster sampling technique was used to select prospective participants in the study. The participants were recruited in various public places such as churches, neighborhood markets and schools in the four communities making up Nnewi town. The communities are Uruagu, Umudim, Otolo and Nnewichi

3.5 Sample Size

The minimum sample size of participants in the study was determined by the formula:

$n = z^2 p (1-p)/d^2$-----for a finite populationé é é é é é é é é é é é é é 1

Where ñnò is the desired minimum sample size;

Z is 1.96 at 95% confidence interval; and

P is estimated population proportion.

Since this proportion was not known for the target population, a value of 50% (i.e. 0.5) was assigned to obtain the maximum value for P.

ñdò is the absolute precision required on either side of the proportion = 5% (0.05).

Therefore;

$n = (1.96)^2 \times 0.5(1-0.5)/ (0.05)^2 = 384$

Despite the above minimum sample size, a sample of 3501 subjects was chosen for this study which is more than nine times the calculated minimum sample size of 384.This was to increase the validity of the study.

3.6 Selection Criteria

The subjects who participated in this study were selected using the following selection criteria:

Inclusion Criteria

i. Subject must be of Igbo ethnic origin and residing in Nnewi

ii. Subject must be 18 and above.

iii. Subject must willingly consent to participate in the study

Exclusion Criteria

i. Subject of non-Igbo origin or does not reside in Nnewi

ii. History of cholecystectomy

iii. Being under aged (below 18 years old)

iv. Those who declined to participate were excluded.

3.7 Ethical Clearance/Informed consent.

In accordance with Helsinki declaration, approval for the study was obtained from the Human Research and Ethical Committee, Nnamdi Azikiwe University Teaching Hospital, Nnewi (see appendix I). Informed consent was sought and obtained from each participant prior to enrolment into the study. The informed consent form signed by each participant is shown in appendix II.

3.8 Method of Data Collection

Each subject underwent abdominal ultrasound scanning with emphasis on the biliary system to determine the presence or otherwise of gallstone. This was followed by weight and height measurements using a well calibrated weighing balance and a meter rule respectively. Lastly, age, was obtained from each subjectôs birth certificate.

Figure 3: *Typical sonographic appearance of gall stone*

The weight of each subject was determined using a well calibrated weighing balance, *Herson Emperos*™ manufactured in China. It is graduated in 0.1Kg interval and capable of weighing up to 120Kg. The weight was measured with the weighing balance placed on a level ground and the patient standing barefooted and wearing light clothes. The height was measured with a well calibrated meter rule, with the patient standing in Frankfurt position. Head apparels were removed before the measurements were made. Body Mass Index (BMI) was calculated using the formula:

BMI = weight (Kg) / Height(m^2)é 2

Ultrasound scanning was conducted using a portable *Kaixin KX 2000G* ultrasound scanner with *serial number 0911052* and a 3.5 MHz curvilinear transducer. The portable scanner was manufactured by *Xuhou Kaixin Electronic Instrument Company Limited, Jiangsu, China*. The ultrasound machine was subjected to quality assurance test to ensure optimal resolution and accurate

measurement before being used for the study. Gallstones were observed as echogenic precipitates in the gallbladder and its ducts as shown in figure 4. Presence of cholecystitis was diagnosed as thickening of anterior gallbladder wall; usually exceeding 3.0mm with or without a halo of oedema. Symptomatic gallstones were diagnosed only in patients with co-existing right upper abdominal quadrant tenderness (Murphyôs sign).

3.9 Scanning Technique

A basic scanning protocol was adopted and replicated for each subject. The protocol used is as described by Sanders (1990). Each subject was laid supine on the moveable examination couch and coupling gel liberally applied over the right upper quadrant (RUQ). Each subject fasted for a minimum of 8 hours prior to the investigation. The scans were targeted to take place in the afternoon before lunch to ensure that the participants had fasted for the minimum period before scanning. The time gain compensation (TGC) of the ultrasound scanner was set such that the depth of each gallbladder as far as the posterior wall was well demonstrated. The gallbladder was first examined with each subject in supine position. Then the long axis view was obtained by varying the obliquity of the transducer until the maximum length of the gallbladder was in view. This was followed by scanning the short axis of the bladder starting from the neck and sweeping through the fundus. More caudal angulations through the body demonstrated the entire fundus.

The procedure was repeated with subject in decubitus, prone and upright positions to ensure holistic evaluation of the gallbladder.

In order to protect the privacy of the subjects scans were conducted in makeshift cubicles constructed with mobile polythene screens. Electricity to power the scanner was provided by a *Tiger 960* portable gasoline generator connected to a distribution board.

3.10 Methods of Data Analysis

Statistical analysis was done using the Statistical Package for Social Sciences version 20.0 (SPSS Inc., Chicago Illinois). Both descriptive and inferential statistics were done. Statistical significance was considered at $p < 0.05$. Gallstone incidence according to sex, age and body mass index was analyzed using descriptive statistical tools such as expressed in frequency distribution tables.

CHAPTER FOUR

RESULTS

Table 1: Anthropometric variables of all the subjects

Factor	**N**	**Minimum**	**Maximum**	**Mean ± SD**
Age (years)	3501	18.0	92.0	33.88 ± 12.60
Weight (kg)	3501	25.0	138.0	72.60 ± 14.79
Height (m)	3501	1.12	1.88	1.65 ± 0.07
BMI (Kg/m^2)	3501	17.00	58.80	26.60 ± 4.53

As shown in the table 1, the minimum age of the subjects, was 18 years, and maximum age was 92 years, with mean of 33.88 ± 12.60 years. Weight had minimum and maximum values of 25 Kg and 138 Kg respectively, and a mean of 72.60 ± 14.79Kg. Height ranged from 1.12 to 1.88m with a mean of 1.65 ± 0.07m whereas the body mass index (BMI) was between 17.0 to 58.80 Kg/m^2 with a mean of 26.60 ± 4.53 Kg/m^2.

Table 2: Gender distribution of all the subjects

Gender	**Frequency**	**Percentage**
Female	1770	50.6
Male	1731	49.4
Total	3501	100

There is almost equal representation of both genders as shown in the sex distribution of the subjects. In table 2, male subjects contributed 49.4% (n = 1731) of the subject studied while female subjects were 50.6% (n = 1770) of the entire subjects. The female subjects were made up of women with widely differing characteristics as shown in table 3 below:

Table 3: Anthropometric variables of the female subjects

Factor	N	Minimum	Maximum	Mean ± SD
Age (years)	1770	18.0	92.0	32.92 ± 11.76
Weight (kg)	1770	25.0	138.0	72.66 ± 14.70
Height (m)	1770	1.38	1.88	1.64 ± 0.70
BMI (Kg/m^2)	1770	17.00	58.80	26.81 ± 4.75
Parity	1770	0	9	2.44 ± 1.98

For clarity, the frequency distribution of parity of these women is shown in table 4 below:

Table 4: Distribution of parity of the female subjects

Parity	Frequency	Percentage
0	242	13.7
1	446	25.2
2	382	21.6
3	246	13.9
4	196	11.1
5	105	5.9
6	72	4.1
7	32	1.8
8	38	2.1
9	11	0.6
Total	**1770**	**100**

From the table above, majority of the subjects (60.7%; n = 1074) had carried at least 1 to 3 pregnancies to at least 28 weeks while only 13.7% (n = 242) have not carried any pregnancy up to 28 week.

Table 5: Distribution of gallbladder stones among the subjects studied

Number of stones	Frequency	Percentage
None	3347	95.6
One	96	2.7
Two	37	1.1
Three or more	21	0.6
Total	3501	100

As shown in table 5, a total of 95.6% (n = 3347) of the patients had no stones, 2.7% (n = 96) had solitary stones, 1.1% (n = 37) two stones, and 0.6% (n = 21) three stones or more.

T**able 6:** Distribution of stones according to age and sex

Age (years)	Number of subjects with stones			Ratio
	Total	Male	Female	
Ò20 (n =295)	4	1	3	1 : 3
21-30 (n = 1484)	19	3	16	1 : 5.3
31-40 (n = 957)	50	1	49	1 : 49
41-50 (n =398)	28	12	16	1 : 1.3
51-60 (n =190)	15	5	10	1 : 2
61-70 (n = 132)	22	9	13	1 : 1.4
71-80 (n = 26)	10	5	5	1 : 1
Ó81 (n = 19)	6	5	1	5 : 1
Total (N = 3501)	**154**	**41**	**113**	**1 : 2.8**

In table 6, gallstone occurrence was least common among the subjects who are less than or equal to 20 years and those above 80 years. It was common among those between 21 and 80 years. It was most common in the 31 to 40 years age group. Among the female subjects, gallstone occurrence according to parity is shown in table 7 below:

Table 7: Gallstone occurrence according to parity of female subjects

Parity	**Frequency of gallstone**	**Percentage**
Nulliparous	8	7.1
1 ï 3	32	28.3
4 ï 6	52	46.0
7 and more	21	18.6
Total	**113**	**100**

From the table above, gallstone is significantly less in nulliparous women but age of the subjects was not taken into consideration.

Table 8: Distribution of stones according to BMI and sex

Gender	**Underweight (< 18.5kg/m^2)**					
	Number of subjects without stones	Number of stones in subject with stones (n=154)			Subtotal	Total
		1	2	3 or more		
Male	2	0	0	0	0(0%)	2
Female	4	0	0	0	0(0%)	4
Subtotal	6	0	0	0	0(0%)	6(0.17%)
Normal weight (18.5-24.9kg/m^2)						
Male	734	5	1	0	6 (3.9%)	740
Female	665	17	11	3	31(20.1%)	696
Subtotal	1399	22(14.3%)	12(7.8%)	3(1.9%)	37(24.0%)	1436(41.0%)
Over- weight (25.0-29.9kg/m^2)						
Male	658	9	4	6	19(12.3%)	677
Female	683	22	6	5	33(21.4%)	716
Subtotal	1341	31(20.1%)	10(6.5%)	11(7.1%)	52(33.7%)	1388(39.6%)
Obese (30.0 kg/m^2 and over)						
Male	296	12	7	2	21(13.6%)	317
Female	305	31	8	10	49(31.8%)	354
Subtotal	601	43(27.9%)	15(9.7%)	12(7.8%)	70(45.4%)	671(19.2%)
Total	**3347(95.6%)**	**96(2.7%)**	**37(1.1%)**	**26(0.7%)**		**3501(100%)**

In table 8 above, BMI is sub-grouped into underweight (less than 18.5Kg/m^2), normal weight (18.5 to 24.9 Kg/m^2), overweight (25.0 to 29.9 Kg/m^2) and obese (30.0Kg/m^2 and above).

For BMI category <18.5 Kg/m^2, no stone was found. For BMI category (18.5.0 - 24.9Kg/m^2) 14.3% (n = 22) had one stone, 7.8 % (n = 12) two stones, and 1.9% (n = 3) three stones or more. In the 25.0 - 29.9Kg/m^2 BMI category, 20.1% (n = 31) had one stone, 6.5% (n = 10) two stones and 7.1% (n = 11) three stones or

more. In the category of 30Kg/m^2 and above, 27.9% (n = 43) had one stone, 9.7% (n = 15) two stones and 7.8% (n = 12) three stones or above.

The distribution of stones according sex and BMI of the subjects is as described hereafter. For 18.5 - 24.9Kg/m^2 category it was 3.9% (n = 6) for male and 20.1% (n = 31) for female ($p < 0.05$). For the 25.0 - 29.9Kg/m^2 category, the sex distribution was 12.3% (n = 19) for male and 21.4% (n = 33) for female ($p < 0.05$). For the 30.0Kg/m^2 and above category, it was 13.6% (n = 21) for male and 31.8% (n = 49) for female ($p < 0.05$).

Table 9: Distribution of stones according to clinical presentation

Symptomatic (Yes) /Asymptomatic (No)				
Number of stones	**1**	**2**	**3 or more**	**Total**
Yes	21	10	11	42(27.3%)
No	75	27	10	112(72.7%)
Total	**96 (62.3%)**	**37 (24.0%)**	**21 (13.6%)**	**154 (100%)**
Associated cholecystitis (Yes) / No associated cholecystitis (No)				
Yes	5	1	2	8(5.2%)
No	91	36	19	146(94.8%)
Total	**96 (62.3%)**	**37 (24.0%)**	**21 (13.6%)**	**154 (100%)**

Table 9 above shows the breakdown of the stones according to their clinical presentation. This was based on their tendency to cause symptoms (Murphyôs sign) or inflammatory changes on in the gallbladder (cholecystitis).

Table 10: Comparison of gallstone prevalence in current study with known epidemiological statistics

Population	**Prevalence (percentage)**
United States (Shaffer, 2005)	15%
Italy (Attili et al.,1995)	11%
Peru (Morao et al., 2000)	16%
Sweden (Halldesta et al., 2009)	8.3%
Pakistan (Channa et al., 2000)	9.3%
United Kingdom (Shaffer, 2005)	15%
Nnewi, Nigeria (Present study)	4.40%

Table 10 above shows the comparison of the prevalence value (in percentage) of gallstone in the current study with that in other known epidemiological reports. The prevalence from this study is lower than other published values from other populations. It is evident from this study that gallbladder stone prevalence in the studied population is statistically insignificant.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.0 Discussion.

5.1 Distribution of Gallstone According to Sex and Age

In accordance with the findings of previous studies, female sex was a major risk factor for gallstone disease in the present study. This study shows that women are significantly more affected by gallstone than men, with female to male ratio of 2.8 : 1. This may largely be due to extraneous risk factors, such as pregnancy and sex hormones. The number of pregnancies is the main one related to the high rates of gallstone disease in women(Attili et al,. 1997 and Shaffer, 2005). Sex hormones are likely to be responsible for the increased risk. Estrogen increases biliary cholesterol secretion causing cholesterol super saturation of bile. Thus, hormone replacement therapy in postmenopausal women has been described to be associated with an increased risk for gallstone disease (Sattish, 2007).

The current study, in accordance with research findings from the Western countries and the United States, showed that an adult age is a significant risk factor for gallstone disease, Kono et al.,1992, Lu et al., 1990, and Festi et al., 2008. This could possibly explain why the findings of the present study shows virtually non-existent of gallstones in subjects of 20 years and bellow. This point was highlighted in the work of Kriska et al.,(2007) and Volzke et al., (2005) which

found that long term exposure to many risk factors as is true for elderly, may increase the risk of gallstone disease. At the same time sedentary activity which is greater in the elderly may also increase the risk of gallstone disease. However, above the adolescence age the pattern of gallstone distribution in the current study showed no definite pattern, making it difficult to make valid inferences across the various adult age groups.

5.2 Gallstone Prevalence According to Body Mass Index

In the current study, the strength of the association between obesity and gallstone disease is strong. This is in agreement with many other works: The study by Jarl et al. (2003) established that in the Swedish population obese subjects had significantly higher prevalence of cholelithiasis compared with the reference population. A study on pediatric obesity by Koebnick et al. (2012) moreover shows higher odds of gallstone prevalence amongst obese subjects. Moreover, studies in the Netherland (Thijs et al,1992) and the United States (Friedman et al, 1966) separately showed clear positive association of BMI with gallstone disease. This could be explained by high level of plasma cholesterol in obese subjects (Erlinger and Serge, 2000).

5.3 ASymptomatic presentation of gallstones

In accordance with the work by Bilhartz and Horton (1998), the current study revealed 80% asymptomatic gallstone disease. This percentage of the gallstones

was only noted as incidental findings. Long- term follow-up studies from the West have consistently shown that only a small minority of asymptomatic gallstones lead to development of symptoms /complication later on, Anu and Kapoor,(2012). In separate studies, Friedman et al, (1998) and Thistler et al, (1984) revealed that factors that have been reputed to confer a higher risk of progression from asymptomatic to symptomatic status include age less than 55 years, smoking, female sex, greater body weight, presence of three or more gallstones, and presence of floating stones. Other work by Sacoratas et al., (2007) went on that life expectancy above 20 years, calculi above 2cm in diameter, calculi less than 3mm, patent cystic duct ,non-functioning gallbladder and perioperative detection of incidental gallstones are the risk factors for progression to symptomatic gallstone disease. The current study is a cross-sectional non-cohort study and therefore cannot provide any explanations on the effects of any of the above mentioned factors implicated to cause progression from asymptomatic to symptomatic gallstone disease status.

5.4 Comparison of Findings with Other Epidemiological Reports

In the present study, gallstone disease is apparently not common in the test population, i.e. an estimated 4.4% of adult population in Nnewi, has gallstone disease. The reported prevalence rate of gallstone in the United States and Europe is approximately 15% (Shaffer, 2005). In Italy alone it is 11% (Attili et al., 1995),

and 16% among Peruvian coastal natives (Marao et al., 2000). In Sweden it is 8.3% (Halldesta et al., 2009), and 9.3% in Pakistan (Channa et al., 2000). In China it is 10.7% Hiu et al, (2009).

The findings of gallstone disease prevalence in the United States, Europe and Asia as outlined above shows wide margin above the findings of the current study. And the findings of the current study are approximately similar with the findings of most other researches on gallstone diseases in other native African and African-American populations: In Ibadan, Nigeria, it is 2.1% (Akute et al., 1989), in Tunisian it is 4% (Abdel et al., 1991). In Sudan and South Africa it is 5.2% (Leila et al., 2000) , and 6.0% (Walker et al., 1989). The apparently low prevalent rate of gallstone disease as found in the current study and researches on other Black population compared with what obtains in the United States, Europe and Asia could be explained by genetics, diets and environmental factors.

This suggests that the genetic make- up of the people of Nnewi, their diet and environment are highly protective against gallstone disease. This study has among other things estimated the prevalence risk status of people of Nnewi on gallstone distribution. Moreover, as Nnewi has all the prerequisite characteristics representative of Igbo ethnic group, the application of this research findings could as well be extended to the entire people of South Eastern Nigeria.

5.5 Summary of Findings

i. Women are significantly more affected by gallbladder stone than men (73.4%, n = 113 for women versus 26.6%, n = 41 for men; $p < 0.05$).

ii. Gallstone incidence in the studied population was least among subjects in the under 20-years age group.

iii. Gallstone incidence in the studied population was highest among the 31-40 years age group and then decreased in no specific pattern afterwards.

iv. Occurrence of gallbladder stone amongst different age groups followed a non-specific pattern.

v. There was no stone seen in underweight subjects.

vi. Highest gallstone incidence was seen among the obese category.

vii. There was increase in gallbladder stone incidence with increasing BMI but this was not statistically significant ($p > 0.05$).

5.6 Conclusions

According to the findings of this study, the prevalence rate of gallbladder stone in adult population of Nnewi is 4.40%. This occurred in male to female ratio of 1: 2.8. These findings agree with most other researchesô that reported low gallstone prevalence among blacks and greater prevalence amongst women. Distribution of gallstone according to age showed no specific pattern. Gallstone prevalence showed moderate increase with rising BMI values. Greater majority of

the gallbladder stones were asymptomatic and were mainly noted as incidental findings.

5.7 LIMITATION OF THE STUDY

Although the finding of this study suggests that there could be racial difference in gallstone distribution, it was not able to give empirical explanation to this.

5.8 Recommendations

(1) Most of the gallstones noted were asymptomatic and hence were incidentally observed. This makes them potentially more life-threatening to the patients than symptomatic stones. It is therefore advisable that every patient presenting for abdominal and pelvic ultrasound investigation should always have his or her gallbladder examined.

(2) Due to the insidious nature of gallstones, people should be advised by clinicians to always undergo ultrasound examination of the gallbladder at regular intervals.

(3) At different BMI categories, it was noted that women were significantly more affected by gallstone than men. Therefore, women should be advised to check the risk factors that are under their control such as use of oral contraceptives and engaging in regular excises.

5.9 Areas for Further Study

1. The researcher suggests a biomedical study on genetical similarity between individuals with gallbladder stones.
2. Further study should be carried out to determine the dietary protective factors against gallstone formations in our locality.

REFERENCES

Abdel Bagi M, Arcbi M, Abdel Rahim (1999). Prevalence of gallstone in Sudan; first sonographic field study in adult population. *Gastroenterology*: 100:a307.

Akute OO, Marinho AO, Kalejaiye (1999). Prevalence of gallstone in a group of antenatal women in Ibadan, Nigeria. *African Journal of Medicine and medical Science; 28(3-4): 159-61.*

Akute OO, and Obajimi MO (2002). Cholelithiasis in Ibadan. *West African Journal of Medicine;* 21(2):128-31.

American Institute of Ultrasound in Medicine (AIUM) Bioeffect Committee (1997); Bioeffect consideration for the safety of diagnostic ultrasound. *Journal of Ultrasound in Medicine,* 7(suppl 9): S1-38.

Assefa G, (2008). Prevalence of gallstone disease in Ethiopia. *Ethiopian Journal of Health Development;* 22(2): 206-211.

Attili AF, Capocacial R, Carulli N, Festi D, (1997). Factors associated with gallstone disease in the MICOL experience. Multicenter Italian study on epidemiology of cholelithiasis. *Hepatology*; 26(4): 809-18

Bar Dayan Y, Vilkin A, Niv Y, (2004). Gallbladder mucin: a role in gallstone formation. *European Journal of Internal Medicine*; 15(7): 411-414.

Bartoli E, and Carpron JP, (2000). Epidemiology and natural history of cholelithiasis. *Rev Pract*; 50: 2112-2115.

Bilhartz L, and Horton J, Gallstone disease and its complication (2003*). Sleisenge and Fordtran.* 6th Edition. WB Saunders Publishers: Philadelphia. Pp. 102-105

Brown SK, Cann PH, Read NW, (1990). Effect of coffee on distal colon function. *Gut*; 31: 450-453.

Capocaccial L, Ricci G, Angelco F, Diehl AK, (1991). Genetic, ethnic and environmental factors; *Findings from the San Anthonio heart study.* Kluwer Academy Publisher: Dordrecht. Pp 89-94.

Caroli- Bosc FX, Deveau C, Peten EP (1998). Cholelithiasis and dietary risks

factors; An epidemiologic investigation in Vidauban Southeast France. *General Practitioners Group of Vidauban. Dig Dis Sci;* 43: 2131-2137.

Channa NA, Khanger MI, Leghari MH, (2004). Surgical incidence of cholelithiasis in Hyderabab and adjoining areas. *Pakistan Journal of Medical Science*; 20 (1): 13-7.

Colditz GA, Brewer TF, Berkey CS et al. (1994). Efficacy of BCG Vaccine in prevention of Tuberculosis. Meta-analysis of the published data. *Journal of American Medical Association*; 271(9): 698-702.

David .S. and Jeremy W.R.Y.A, (1995). *Consise texbook of Clinical Imaging. Second edition. Anne S Patterson publishers: Vail-york* Pp. 241-247.

Douglas BR, Jansen JB, Tham RT , (1990). Coffee stimulation of cholecystokinin release and gallbladder contraction in human. *American Journal of Clinical Nutrition;* 52: 553-556.

Durosinmi MA, Ogunseyinde AO, Olatunji PO, Esan GT, (1989). Prevalence of cholelithiasis in Nigerians with sickle cell disease. *African Journal of Medicine and medical l Science;* 18 (3): 223-227.

Everhart JE, Khare M, Hill M, (1999). Prevalence and ethnic difference in gallbladder disease in the United States. *Gastroenterology;* 117: 632-639.

Erlinger and Serge(2000). Gallstone in obesity and weight loss; *European Journal Gastroenterology* and Hepatology: 12(12)

Festi D, Dormi A, Cappodicasa S, et al(2008). Incidence of gallstone in Italy: Result from a multipopulation-based Italian study. *World Journal of Gastroenterology:* 14: 5282-5289

Frank L, Martin C,Veverly B(2001). Chromosomal organization of candidate genes invoved in cholesterol gallstone formation: A murine gallstone map.*AGA Institute Gastroenterology*120(1): 221-238

Friedman GD, Reviola CA, Fireman, (1998). Prognosis of gallstones with mild or no symptoms: 25 years of follow-up in health maintainance organization. Journal of Clinical Epidemiology: 42(2):127-136.

GREPO Group (1988). The epidemiology of gallstone disease in Rome, Italy. Part1. Prevalence data in men. The Rome Group for epidemiology and prevention of cholelithiasis(GREPOCO). *Hepatology;* 8 (4): 904-906.

Guataffson U, Wang PH, Axelson M, Kallner A , (1997).The effect of vitamin C in high doses on plasma and biliary lipid composition in patients with cholesterol gallstone. *European Journal of Clinical Investigations*; 27: 387-391.

Hui S, Hong T, Shan J,et al(2009).Gender and metabolic differences of gallstone disease. *World Journal of Gastroenterology*: 15(15):1886-1891

Halldestam I,Kullman E,Borch K (2009), *gallstone prevalence in the United kingdomBritish Journal of Surgery; 96 (11): 17-21.*

Jarl ST, Anna KL, Ingama N, and Markku (2003). Gallstones, gallbladder disease and pancreatitis. The American journal of gastroenterology: 98: 1032-1041.

Joelle K, Beatriz T, Shahid P, et al(2003). Phosphatidylcholine-enriched diet prevent gallstone formation in mice susceptible to cholelithiasis.*Journal of Lipid Research:* 12(14): 111-115

Kesaniemi YA, Koshenvuo M, Vuoristo M, (1989). Biliary lipid composition in monozygotic and dizygotic pairs of twins. *Gut;* 30: 1750-1756.

Keith L.M, Arthur F.D, and Anne M.R, (2010), Clinically oriented anatomy, 6th Edition. *Lippincott publishers*, New York, Pp. 274-288

Koebnick C,Smith N,Black M H, Porter A H, Richie A ,Hudson S, Gililland D J Steven JL ,George F (2012). Pediatric obesity and gallstone disease. *Journal of Paediatric Gastrology and Nutrition:* 55 (3): 328-333.

Kono S, Shinchi K,Ikeda N, et al(1992). Prevalence of Gallstone disease in relation to smoking, alcohol use,obesity, and glucose tolerance: A study of self ï defence official in Japan. *Americal Journal of Epidemiology* 136: 787-794

Kriska AM, Brach JS, Jarvis BJ, et al (2007). Physical activity and gallbladder disease determined by ultrasonography. Medical Science Journal on Sports: 39:1927-1937

Kurtin WE, Schwesinger WH, Diehl AK (2000). Age related changes in chemical composition of gallstones. *International Journal Surgical Investigation*; 2: 299-307.

Leila Safer, Fathia Bdioui, Braham A (2000). Epidermiology of biliary lithiasis in Tunisia. *Clinical and Biological Gastroenterology*; 24: 883-887.

Lillemoe KD, Magnuson TH, High RC (1989). Caffeine prevents cholesterol gallstone formation. *Surgery*; 106: 400-406.

LLôChenko AA (2004). Classification of cholelithiasis. *Ter Arkh*.; 76: 75-8
.

LLôChenko AA, (2004). The problem of classification of Cholelithiasis. *Eksp. Klin. Gastroenterol;* 8-12.

Lu SN, Chang WY, Wang LY, et al(1990) Risk factors for gallstones among Chines in Taiwan: Community sonographic Survey. *Journal of Clinical Gastroenterology:* 12: 542- 546

Maclure KM, Hayes HC,Colditz GA, (1989). Diet and the risk of symptomatic gallstones in middle-aged women. New *England Journal Medicine*; 321: 563-569.

Mclntosh DM and Penney HF, (1990). Grey-scale ultrasonography as a screening procedure in the detection of gallbladder disease. *Radiology*; 136: 725-727.

Miquel JF, Coverrubias C, Villaroel L (1998). Genetic epidemiology of cholesterol cholelithiasis among Chilean Hispanics, Amerindians and Maoris. *Gastroenterology;* 115: 937-946

Moor EW ,(1990). *Biliary calcium and gallstone formation*. *Hepatology;* 12: 206s-14s.

Olokoba AB, Bojuwoye BJ, Katibi IA, Ajayi AO, Olokoba LB, Braimoh KT, Inikori AK (2007). Cholelithiasis and type 2 diabetes mellitus in Nigerians. *South African Gastroenterology;* 5 (3): 14-19.

PI Moroa, W Checkleye, RH Gilmamb, L Cabreraa, A G Lescanoa, JJ Bonillad, B Silvae ,(2000). *Galstone disease in obese patients .GUT*; 46: 569-573 doi:10.1136/*GUT*.46.4.569.

Roger C .Sanders (Ed.) (1998). Clinical sonography: a practical guide. 3rd edition. Phliadelphia: Lippincott Williams and Wilkins Publishers. Pp. 245-246.

Roglans N, Vazquez-Carrera M, Alegret M, (2004). Fibrates modify the expression of key factors in bile-acid synthesis and biliary-lipid secretion in gallstone patients. *European Journal of Clinical Pharmacology*; 59(12): 855-861.

Roslyn JJ, Binns GS, Hughes EF (1993). Open Cholecystectomy. A contemporary analysis of 42.474 patients. *Annals of Surgery;* 218: 129-137.

Salvesen K.A (2002). Ultrasound and left handedness. *Ultrasound Obstetric Gynecol* 19:217-221.

Samara ZQ, Ikram N , Paeveen R (1988). Composition of gallstone of patients of Maltan Region. *Journal of Pure and Applied science*; 7(1): 1-9.

Satish KB (2007). *Textbook of Radiology and Imaging*. Fist edition. CBS Publishers and distributors : New Delhi, Bangalore : Pp. 133-137.

Serin SK, Negi VS, Dewan R, (1995). High familial prevalence of gallstone in first-degree relatives of gallstone patients. *Hepatology;* 22: 138-141.

Shaffer EA, (2005). Epidemiology and risk factors for gallstone disease; has the paradigm changed in the 21st century. *Current Gastroenterology Reproduction;* 7: 132-40.

Stewart L, Oestelo AL, Erdan L (2002). Pathogenesis of pigment gallstones in western societies: the central role of bacteria. *Journal of Gastrointestestinal Surgery;* 6(6): 891-903.

Tsai CJ, Leitzmann MF, Willet WC.(2004), The effect of long-term intake of cis-unsaturated fats on the risk for gallstone disease in men; A prospective cohort study. *Annual Internal Medicine*; 14: 514-22.

Volske H, Beumester SE, Alte D, et al, (2005). Independent risk factors for gallstone formation in region with high cholethiasis prevalence. Digestion: 71: 97-105

Walker AR, Segal I, Postner (1989). Prevalence of gallstones in elderly black

women in Soweto Johannesburg, as assessed by ultrasound. *American Journal of Gastroenterology;* 84:1383-85.

APPENDIX I: ETHICAL CLEARANCE

APPENDIX II: INFORMED CONSENT FORM

Consent by volunteers to take part in the research; Prevalence of Gallbladder Stone in Namdi Azikiwe University Teaching Hospital Nnewi, Nigeria,

I----------of ----------have accepted to take part in the research mentioned above.

Mr----------has explained the procedure to me.

and I have accepted to be used for the study having understood that it is for the sole purpose of medical research.I also understood that I am entitled to withdraw my consent whenever I wish to do so.

Date----------,

Subject/parents name/signatire----------

Witnessôs name/signature----------

-

DECLARATION BY THE RESEARCHER

I hereby declare that I have explained to the volunteer the nature of this research and that his refusal will not affect his relationship with me in any way.

Researcher----------

Date----------

APPENDIX III: DATA COLLECTED FROM THE PARTICIPANTS

S/N	GENDER	AGE	WEIGHT(Kg)	HEIGHT(M)	BMI	NO OF STONES	SYMPTOMS
1	F	55	79	1.8	24.3	1	YES
2	F	37	70	1.71	24	0	NO
3	F	21	63	1.67	22.6	0	NO
4	F	32	60	1.61	23.2	2	NO
5	F	28	88	1.65	32.4	0	NO
6	F	38	100	1.59	39.5	0	NO
7	F	31	85	1.6	33.2	0	NO
8	F	29	75	1.6	29.3	0	NO
9	F	27	67	1.71	22.9	0	NO
10	F	32	80	1.6	31.3	0	NO
11	M	36	86	1.74	28.3	0	NO
12	F	27	97	1.6	37.9	0	NO
13	F	34	90	1.68	31.9	0	NO
14	F	23	72	1.7	24.9	0	NO
15	F	20	67	1.63	25.2	0	NO
16	F	59	105	1.6	41	0	NO
17	F	31	68	1.66	24.6	0	NO
18	F	36	60	1.6	23.4	0	NO
19	F	67	89	1.72	30.1	0	NO
20	F	24	72	1.62	27.5	0	NO
21	F	33	70	1.6	27.3	0	NO
22	F	28	100	1.58	40	0	NO
23	F	29	74	1.63	27.8	0	NO
24	F	32	75	1.55	31.3	0	NO
25	F	23	76	1.66	27.5	0	NO
26	F	32	93	1.67	33.3	0	NO
27	F	43	64	1.69	22.4	2	NO
28	F	25	70	1.68	24.8	0	NO
29	F	29	79	1.66	28.6	0	NO
30	M	60	91	1.72	30.7	0	NO
31	F	25	71	1.72	24	0	NO
32	F	22	75	1.67	26.9	0	NO
33	F	27	80	1.7	27.7	0	NO
34	F	28	95	1.78	30	0	NO
35	F	50	80	1.65	29.4	0	NO
36	F	38	70	1.66	25.4	0	NO

37	F	33	72	1.65	26.5	0	NO
38	F	33	130	1.62	49.6	0	NO
39	F	36	69	1.6	27	2	NO
40	F	27	104	1.72	35.1	0	NO
41	F	20	66	1.65	24.3	0	NO
42	M	35	80	1.73	26.7	0	NO
43	F	19	60	1.58	24	0	NO
44	F	20	68	1.65	25	0	NO
45	F	24	88	1.68	31.2	0	NO
46	F	28	88	1.68	31.2	0	NO
47	F	33	91	1.66	33	0	NO
48	F	34	110	1.68	39	0	NO
49	F	30	80	1.68	28.4	0	NO
50	F	24	65	1.68	23	0	NO
51	M	62	108	1.7	37.4	0	NO
52	F	31	78	1.63	29.3	0	NO
53	F	28	125	1.72	42.2	0	NO
54	F	26	80	1.72	27	0	NO
55	F	36	68	1.7	23.5	1	NO
56	F	41	90	1.8	27.8	0	NO
57	M	76	68	1.63	25.6	2	NO
58	F	29	64	1.63	24.1	0	NO
59	M	51	75	1.68	26.6	0	NO
60	F	41	95	1.67	34.1	0	NO
61	F	27	98	1.78	31	0	NO
62	F	28	74	1.67	26.6	0	NO
63	F	27	76	1.7	26.3	0	NO
64	F	21	59	1.64	21.9	0	NO
65	F	41	95	1.67	34.1	0	NO
66	F	28	99	1.65	36.4	0	NO
67	F	28	60	1.66	26.1	0	NO
68	F	19	72	1.72	24.3	0	NO
69	F	28	75	1.6	29.3	0	NO
70	F	22	65	1.58	26	0	NO
71	F	26	60	1.66	21.7	0	NO
72	F	45	61	1.72	20.6	0	NO
73	F	20	60	1.67	21.5	0	NO
74	F	26	81	1.63	30.5	0	NO
75	F	28	81	1.59	32	0	NO
76	F	19	79	1.64	29.4	0	NO
77	F	32	75	1.52	32.5	0	NO

78	F	25	85	1.68	30.1	0	NO
79	F	21	65	1.62	24.8	0	NO
80	F	18	68	1.57	27.6	0	NO
81	F	18	64	1.68	22.7	0	NO
82	F	26	74	1.68	26.2	0	NO
83	F	23	77	1.73	25.8	0	NO
84	F	28	56	1.71	19.2	0	NO
85	F	40	59	1.56	24.3	0	NO
86	F	43	81	1.58	32.4	0	NO
87	F	35	71	1.58	28.4	0	NO
88	F	36	56	1.72	18.9	0	NO
89	F	35	87	1.67	31.2	3	NO
90	F	26	86	1.66	31.2	0	NO
91	F	33	77	1.7	26.6	0	NO
92	F	30	66	1.72	22.3	0	NO
93	F	28	55	1.62	21	0	NO
94	F	28	66	1.55	27.5	0	NO
95	M	38	105	1.72	35.5	0	NO
96	F	25	54	1.58	21.6	0	NO
97	M	28	75	1.8	23.1	0	NO
98	F	27	55	1.6	21.5	0	NO
99	F	24	49	1.7	17	0	NO
100	F	27	59	1.6	23	0	NO
101	F	20	55	1.65	20.2	0	NO
102	F	29	74	1.69	25.9	0	NO
103	F	30	85	1.78	26.8	0	NO
104	F	23	86	1.66	31.1	0	NO
105	F	41	110	1.7	38.1	0	NO
106	F	28	70	1.63	26.3	0	NO
107	F	25	71	1.63	26.7	0	NO
108	F	60	46	1.56	17.7	0	NO
109	F	36	96	1.64	37.7	0	NO
110	F	35	73	1.52	31.6	3	NO
111	F	32	116	1.63	42	0	NO
112	F	25	99	1.68	35.1	0	NO
113	F	35	71	1.65	26.1	0	NO
114	F	37	70	1.65	25.7	0	NO
115	M	62	64	1.62	24.4	0	NO
116	F	30	69	1.64	25.7	0	NO
117	F	28	74	1.64	27.5	0	NO
118	F	24	68	1.55	28.3	0	NO

119	M	67	59	1.62	22.5	0	NO
120	F	22	62	1.62	23.7	0	NO
121	F	28	70	1.7	24.2	0	NO
122	M	56	70	1.74	23.1	0	NO
123	M	26	74	1.68	26.2	0	NO
124	F	27	51	1.56	21	0	NO
125	F	30	78	1.62	29.8	0	NO
126	F	70	100	1.6	39.1	3	YES
127	F	40	82	1.7	28.4	1	NO
128	F	32	77	1.6	30.1	1	NO
129	F	31	71	1.8	21.9	0	NO
130	F	34	108	1.68	38.3	0	NO
131	F	33	58	1.58	23.2	0	NO
132	F	23	76	1.7	26.3	0	NO
133	M	27	60	1.62	23.1	0	NO
134	F	30	75	1.6	29.3	0	NO
135	F	39	66	1.62	25.1	0	NO
136	F	42	87	1.58	34.8	0	NO
137	F	33	76	1.58	30.4	0	NO
138	F	28	60	1.55	25	0	NO
139	M	24	38	1.45	18.1	0	NO
140	F	21	73	1.6	28.5	0	NO
141	F	35	66	1.64	24.5	0	NO
142	M	67	69	1.61	26.6	0	NO
143	F	48	79	1.6	30.8	0	NO
144	M	41	107	1.75	35	0	NO
145	F	40	95	1.7	32.9	0	NO
146	M	51	70	1.81	21.3	0	NO
147	F	25	61	1.5	27.1	0	NO
148	F	28	86	1.65	31.6	0	NO
149	F	27	110	1.6	43	0	NO
150	F	28	55	1.58	22	0	NO
151	F	27	75	1.55	31.3	0	NO
152	F	28	110	1.75	35.9	0	NO
153	F	21	69	1.73	23.1	0	NO
154	F	36	90	1.68	31.9	0	NO
155	F	32	66	1.56	27.2	0	NO
156	F	31	87	1.63	32.7	0	NO
157	F	29	76	1.65	27.9	0	NO
158	F	31	80	1.63	30.1	0	NO
159	M	38	74	1.71	25.3	0	NO

160	F	27	75	1.62	28.6	0	NO
161	F	27	74	1.6	28.9	0	NO
162	M	25	66	1.67	23.7	0	NO
163	M	54	78	1.7	27	0	NO
164	F	24	50	1.57	20.3	0	NO
165	F	28	79	1.62	30.2	0	NO
166	F	38	78	1.64	28.9	0	NO
167	F	31	60	1.58	24.1	0	NO
168	F	30	60	1.56	24.7	0	NO
169	M	61	52	1.58	20.8	0	NO
170	F	28	69	1.6	27	0	NO
171	F	32	121	1.7	41.9	0	NO
172	F	24	86	1.68	30.5	0	NO
173	F	25	73	1.7	25.3	0	NO
174	F	27	58	1.63	21.8	1	NO
175	F	24	60	1.62	22.9	0	NO
176	F	26	98	1.7	33.9	0	NO
177	M	21	73	1.76	23.6	0	NO
178	F	56	79	1.67	28.3	0	NO
179	M	81	66	1.68	23.4	0	NO
180	F	27	60	1.68	21.2	0	NO
181	F	18	67	1.68	23.7	0	NO
182	F	39	85	1.7	29.4	0	NO
183	M	34	84	1.69	29.4	0	NO
184	F	26	99	1.7	34.3	0	NO
185	F	24	71	1.87	20.3	0	NO
186	F	24	72	1.58	28.8	0	NO
187	F	28	70	1.64	26	0	NO
188	F	31	78	1.72	26.4	0	NO
189	F	25	84	1.61	32.4	0	NO
190	F	32	81	1.6	31.6	0	NO
191	F	28	63	1.56	25.9	0	NO
192	F	21	89	1.63	33.5	0	NO
193	F	29	93	1.62	35.5	0	NO
194	F	24	74	1.6	28.9	0	NO
195	F	34	88	1.71	30.1	0	NO
196	F	28	55	1.56	22.6	0	NO
197	F	23	111	1.73	37.1	0	NO
198	F	28	60	1.58	24	0	NO
199	F	38	91	1.63	34.2	0	NO
200	F	27	74	1.7	25.6	0	NO

201	F	30	84	1.6	32.8	0	NO
202	F	29	80	1.5	35.6	0	NO
203	F	26	69	1.56	28.4	0	NO
204	F	18	65	1.63	24.4	0	NO
205	M	39	75	1.63	28.2	0	NO
206	F	18	60	1.6	23.4	0	NO
207	F	27	64	1.63	24.1	0	NO
208	F	19	60	1.6	23.4	0	NO
209	F	31	71	1.64	26.4	0	NO
210	F	26	96	1.65	35.3	0	NO
211	F	27	68	1.6	27.2	0	NO
212	F	23	49	1.54	20.7	0	NO
213	F	32	95	1.68	33.6	0	NO
214	F	34	88	1.6	34.4	0	NO
215	M	38	70	1.78	22.1	0	NO
216	F	27	76	1.63	27	0	NO
217	F	68	66	1.66	23.9	1	NO
218	F	22	64	1.68	22.7	0	NO
219	F	31	66	1.6	25.8	0	NO
220	F	27	85	1.68	30.1	0	NO
221	F	25	60	1.54	25.3	0	NO
222	F	32	65	1.63	24.5	0	NO
223	F	22	60	1.65	22	0	NO
224	F	28	73	1.7	25.3	0	NO
225	F	23	68	1.7	23.5	0	NO
226	F	19	59	1.6	23	0	NO
227	F	35	82	1.6	30	0	NO
228	F	32	60	1.68	21.3	0	NO
229	F	30	99	1.62	37.7	0	NO
230	F	27	96	1.63	36.1	0	NO
231	F	25	68	1.63	25.6	0	NO
232	F	24	82	1.64	30.5	0	NO
233	F	26	73	1.63	27.4	0	NO
234	F	33	90	1.68	31.9	0	NO
235	F	27	71	1.52	30.7	0	NO
236	F	24	86	1.68	30.5	0	NO
237	F	20	90	1.6	35.2	0	NO
238	F	30	110	1.58	44.1	0	NO
239	F	26	75	1.68	26.5	0	NO
240	F	27	60	1.61	23.1	0	NO
241	F	28	120	1.78	37.9	0	NO

242	F	28	86	1.68	30.5	0	NO
243	F	62	65	1.65	23.9	0	NO
244	F	28	91	1.61	35.1	0	NO
245	F	31	81	1.58	32.4	0	NO
246	F	32	86	1.61	33.2	0	NO
247	M	67	95	1.59	37.6	0	NO
248	F	22	74	1.6	28.9	0	NO
249	F	46	86	1.6	33.6	0	NO
250	F	31	120	1.68	42.6	0	NO
251	F	36	90	1.64	33.5	0	NO
252	F	40	85	1.84	25.1	0	NO
253	F	32	80	1.68	28.3	0	NO
254	M	37	66	1.69	23.1	0	NO
255	F	27	79	1.68	28	0	NO
256	F	23	74	1.7	25.6	0	NO
257	M	44	105	1.8	32.4	0	NO
258	F	22	61	1.63	23	0	NO
259	F	40	80	1.6	31.2	0	NO
260	F	24	79	1.6	30.9	0	NO
261	F	28	75	1.58	30	0	NO
262	F	22	58	1.61	22.4	0	NO
263	F	35	70	1.58	28	0	NO
264	F	31	115	1.6	44.9	0	NO
265	F	37	95	1.63	35.8	0	NO
266	F	24	96	1.73	32.1	0	NO
267	F	32	92	1.62	35.1	0	NO
268	F	44	91	1.68	32.2	0	NO
269	F	26	72	1.61	27.8	0	NO
270	F	32	62	1.6	24.2	0	NO
271	M	42	65	1.72	22	0	NO
272	F	29	105	1.77	33.5	0	NO
273	F	25	60	1.5	26.7	0	NO
274	F	42	110	1.67	39.4	0	NO
275	M	46	75	1.65	27.5	0	NO
276	M	63	95	1.72	32.1	0	NO
277	M	46	105	1.76	33.9	1	NO
278	F	31	97	1.7	33.6	0	NO
279	F	35	55	1.51	24.1	0	NO
280	F	26	88	1.63	33.1	0	NO
281	F	30	59	1.65	21.7	0	NO
282	F	31	74	1.77	23.6	0	NO

283	F	39	90	1.6	35.2	0	NO
284	F	23	52	1.57	21.1	0	NO
285	F	23	62	1.6	24.2	0	NO
286	F	22	60	1.63	22.6	0	NO
287	F	46	95	1.58	38.1	0	NO
288	F	40	81	1.68	28.7	1	NO
289	F	46	108	1.58	43.3	0	NO
290	F	29	92	1.66	33.4	0	NO
291	F	30	83	1.6	32.4	0	NO
292	M	27	70	1.67	25.1	0	NO
293	F	32	56	1.55	23.3	0	NO
294	M	42	83	1.74	27.4	0	NO
295	M	87	59	1.64	21.9	0	NO
296	F	31	55	1.51	24.1	0	NO
297	F	21	69	1.68	24.4	0	NO
298	F	32	102	1.67	36.6	0	NO
299	F	42	70	1.58	28	3	NO
300	M	22	88	1.77	28.1	0	NO
301	M	30	78	1.82	23.5	0	NO
302	F	32	75	1.57	30.4	0	NO
303	F	40	70	1.55	29.1	0	NO
304	M	71	80	1.71	27.4	1	NO
305	F	20	59	1.7	20.4	0	NO
306	F	41	89	1.57	36.1	0	NO
307	F	27	76	1.56	31.2	0	NO
308	F	40	65	1.56	26.7	0	NO
309	F	32	80	1.63	30.1	0	NO
310	F	25	116	1.63	43.1	0	NO
311	M	23	66	1.7	22.8	0	NO
312	F	50	56	1.6	23.4	0	NO
313	F	27	60	1.55	25	2	NO
314	F	24	81	1.62	30.9	0	NO
315	F	38	95	1.68	32.6	0	NO
316	F	36	85	1.8	26.2	0	NO
317	F	45	80	1.5	35.6	0	NO
318	F	24	64	1.53	27.3	0	NO
319	F	36	91	1.59	36	0	NO
320	F	37	95	1.72	32.1	0	NO
321	F	29	66	1.66	24	0	NO
322	F	22	85	1.63	32	0	NO
323	F	20	62	1.53	26.5	0	NO

324	F	45	60	1.52	26	0	NO
325	M	18	60	1.62	22.9	0	NO
326	F	41	80	1.68	28.3	0	NO
327	F	25	58	1.57	23.5	0	NO
328	F	48	56	1.68	19.8	0	NO
329	F	42	64	1.52	27.7	0	NO
330	F	21	60	1.64	22.3	0	NO
331	F	28	59	1.53	25.2	0	NO
332	F	32	52	1.54	21.9	0	NO
333	F	33	64	1.58	25.6	0	NO
334	F	28	58	1.6	22.7	0	NO
335	M	30	55	1.7	19	0	NO
336	F	23	69	1.65	25.3	0	NO
337	F	28	68	1.58	27.2	0	NO
338	F	27	70	1.63	26.3	0	NO
339	F	38	74	1.62	28.2	0	NO
340	F	23	89	1.72	30.1	0	NO
341	F	25	54	1.62	20.5	0	NO
342	F	25	91	1.73	30.4	0	NO
343	F	24	74	1.73	24.7	0	NO
344	F	27	64	1.65	23.5	0	NO
345	F	28	70	1.68	24.8	0	NO
346	M	24	80	1.74	26.4	0	NO
347	F	30	61	1.63	23	0	NO
348	F	47	84	1.61	32.4	1	NO
349	F	22	66	1.57	26.8	0	NO
350	F	20	69	1.63	26	0	NO
351	F	36	120	1.85	35.1	0	NO
352	F	30	70	1.61	27	0	NO
353	F	25	76	1.6	29.7	0	NO
354	F	21	52	1.55	21.6	0	NO
355	F	29	64	1.6	25	0	NO
356	F	26	66	1.61	25.5	0	NO
357	F	23	64	1.64	23.8	0	NO
358	F	23	70	1.6	27.3	0	NO
359	F	27	60	1.49	27	0	NO
360	F	43	68	1.64	25.3	0	NO
361	F	30	74	1.59	29.3	0	NO
362	F	29	75	1.68	26.6	0	NO
363	F	29	82	1.66	29.8	0	NO
364	F	24	61	1.63	23	0	NO

365	F	33	64	1.55	26.6	0	NO
366	F	33	116	1.68	41.1	0	NO
367	M	35	86	1.72	29.1	0	NO
368	F	35	86	1.8	26.5	0	NO
369	F	34	62	1.64	23.1	0	NO
370	F	24	88	1.7	30.4	0	NO
371	F	27	68	1.67	24.4	0	NO
372	M	30	76	1.67	27.3	0	NO
373	F	24	70	1.63	26.3	0	NO
374	F	23	61	1.61	23.5	0	NO
375	F	22	70	1.58	28	0	NO
376	F	27	60	1.57	24.3	0	NO
377	F	35	72	1.55	30	0	NO
378	F	26	81	1.63	30.5	0	NO
379	F	47	54	1.63	20.3	0	NO
380	F	55	50	1.5	22.2	0	NO
381	F	42	65	1.5	27.1	0	NO
382	F	29	70	1.7	24.2	0	NO
383	M	38	65	1.68	23	0	NO
384	M	32	70	1.66	25.4	0	NO
385	F	19	63	1.63	23.7	0	NO
386	F	27	71	1.7	24.6	0	NO
387	F	32	95	1.62	36.2	0	NO
388	F	24	55	1.59	21.8	0	NO
389	F	25	44	1.5	19.6	0	NO
390	F	27	65	1.5	28.9	0	NO
391	F	30	55	1.44	28.5	0	NO
392	F	36	50	1.54	21	0	NO
393	F	40	80	1.67	28.7	0	NO
394	F	23	64	1.57	26	0	NO
395	F	28	92	1.74	30.4	0	NO
396	F	32	68	1.61	26.2	0	NO
397	F	20	53	1.6	20.7	0	NO
398	M	27	86	1.7	30.8	0	NO
399	F	24	59	1.55	24.6	0	NO
400	F	29	65	1.63	24.5	0	NO
401	F	35	58	1.55	24.1	0	NO
402	F	22	69	1.76	22.3	0	NO
403	F	26	100	1.64	37.2	0	NO
404	F	20	69	1.63	26	0	NO
405	F	26	90	1.64	33.5	0	NO

406	F	28	63	1.59	24.9	0	NO
407	F	37	100	1.84	29.5	1	YES
408	F	27	75	1.59	29.7	0	NO
409	F	36	63	1.64	23.4	0	NO
410	M	22	62	1.71	21.2	0	NO
411	F	34	94	1.6	36.7	0	NO
412	F	28	66	1.64	24.5	0	NO
413	F	26	65	1.64	24.2	0	NO
414	M	70	84	1.63	31.6	0	NO
415	F	36	78	1.73	26.1	0	NO
416	M	26	70	1.8	21.6	0	NO
417	F	39	109	1.63	41	0	NO
418	M	33	63	1.73	21	0	NO
419	M	33	66	1.64	24.5	0	NO
420	F	18	68	1.7	23.5	0	NO
421	F	37	70	1.6	27.3	1	NO
422	F	24	54	1.58	21.6	0	NO
423		70	73	1.7	25.3	0	NO
424	F	29	68	1.59	26.9	0	NO
425	F	37	63	1.61	24.3	0	NO
426	F	31	81	1.7	28	0	NO
427	F	85	70	1.64	26	0	NO
428	M	19	68	1.59	26.9	2	YES
429	F	22	64	1.6	25	0	NO
430	F	51	72	1.66	26.1	0	NO
431	F	60	81	1.7	28	0	NO
432	M	27	60	1.55	25	0	NO
433	F	20	65	1.6	25.3	0	NO
434	F	60	67	1.65	24.6	0	NO
435	F	55	64	1.72	21.6	0	NO
436	F	22	60	1.5	26.7	0	NO
437	F	28	67	1.63	22.6	0	NO
438	F	32	60	1.67	21.5	0	NO
439	F	37	63	1.7	21.8	0	NO
440	F	26	55	1.43	26.9	0	NO
441	F	42	60	1.77	19.1	0	NO
442	F	75	60	1.62	22.9	2	NO
443	F	38	71	1.65	26.1	0	NO
444	F	21	60	1.57	24.3	0	NO
445	F	19	58	1.53	24.8	0	NO
446	F	27	62	1.69	21.7	0	NO

447	F	44	73	1.6	28.5	0	NO
448	M	31	68	1.58	27.2	0	NO
449	F	37	71	1.63	26.7	0	NO
450	F	25	60	1.68	21.3	0	NO
451	M	20	63	1.6	24.6	0	NO
452	F	24	58	1.53	24.8	0	NO
453	F	18	60	1.5	26.7	0	NO
454	F	54	65	1.63	24.5	0	NO
455	F	28	61	1.64	22.7	0	NO
456	F	65	63	1.58	25.2	0	NO
457	F	33	60	1.6	23.4	0	NO
458	F	29	67	1.65	24.6	0	NO
459	F	50	115	1.71	39.3	0	NO
460	F	48	80	1.65	29.4	0	NO
461	F	64	72	1.68	25.5	0	NO
462	F	70	69	1.63	25.9	0	NO
463	F	62	60	1.61	23.1	0	NO
464	M	75	55	1.48	25.1	0	NO
465	M	83	68	1.67	24.4	1	YES
466	F	23	70	1.61	27	0	NO
467	F	31	64	1.7	22.1	0	NO
468	M	48	112	1.71	38.3	0	NO
469	F	56	72	1.64	26.8	0	NO
470	M	48	68	1.67	24.4	0	NO
471	F	21	70	1.66	25.4	0	NO
472	F	33	63	1.6	24.6	0	NO
473	F	60	60	1.53	25.6	0	NO
478	F	51	64	1.61	24.7	0	NO
475	F	62	71	1.63	26.7	0	NO
476	F	59	66	1.6	25.8	0	NO
477	F	61	60	1.61	23.1	0	NO
478	F	80	71	1.65	26.1	0	NO
479	F	81	60	1.58	24	0	NO
480	F	57	100	1.7	34.6	0	NO
481	F	27	63	1.58	25.2	0	NO
482	F	23	60	1.64	22.3	0	NO
483	M	22	65	1.6	25.4	0	NO
484	F	41	70	1.67	25.1	0	NO
485	F	36	60	1.63	22.6	0	NO
486	F	30	65	1.66	23.6	0	NO
487	F	53	80	1.68	28.3	0	NO

488	F	22	86	1.7	29.8	0	NO
489	M	33	60	1.7	20.8	0	NO
490	F	51	119	1.67	42.7	0	NO
491	F	43	50	1.47	23.1	0	NO
492	F	64	70	1.62	26.7	0	NO
493	F	21	70	1.61	27	0	NO
494	F	33	80	1.7	27.7	0	NO
495	F	28	63	1.6	23.7	0	NO
496	F	25	75	1.6	29.3	0	NO
497	F	41	90	1.65	33.1	1	YES
498	F	87	65	1.63	24.5	0	NO
499	F	27	60	1.68	21.3	0	NO
500	F	55	77	1.81	23.5	1	YES
501	F	35	69	1.7	23.9	0	NO
502	F	21	63	1.67	22.6	0	NO
503	F	31	60	1.6	23.4	2	NO
504	F	28	58	1.64	21.6	0	NO
505	F	38	60	1.58	24	0	NO
506	F	31	64	1.61	25.7	0	NO
507	F	29	73	1.59	28.9	0	NO
508	F	28	66	1.7	22.8	0	NO
509	F	32	80	1.61	30.9	0	NO
510	M	37	85	1.73	28.4	0	NO
511	F	26	66	1.62	25.1	0	NO
512	F	34	60	1.68	21.1	0	NO
513	F	23	72	1.7	24.9	0	NO
514	F	20	67	1.63	25.2	0	NO
515	F	61	115	1.67	41.2	0	NO
516	F	32	65	1.64	23.9	0	NO
517	F	35	59	1.61	22.8	0	NO
518	F	68	84	1.74	27.7	0	NO
519	F	28	70	1.61	27	0	NO
520	F	32	70	1.59	27.7	0	NO
521	F	27	62	1.57	25.2	0	NO
522	F	30	72	1.65	26.4	0	NO
523	F	35	74	1.6	28.9	0	NO
524	F	20	76	1.67	27.3	0	NO
525	F	26	65	1.69	22.8	0	NO
526	F	24	70	1.7	24.2	0	NO
527	F	30	80	1.67	28.7	0	NO
528	M	71	91	1.73	30.4	0	NO

529	F	92	85	1.75	27.8	0	NO
530	F	74	66	1.57	26.8	0	NO
531	F	27	80	1.7	27.7	0	NO
532	F	25	90	1.78	28.4	0	NO
533	F	50	69	1.64	25.7	0	NO
534	F	37	72	1.68	25.5	0	NO
535	F	32	70	1.63	26.3	0	NO
536	F	35	120	1.7	41.5	0	NO
537	F	40	70	1.67	25.1	0	NO
538	F	35	104	1.73	34.7	2	NO
539	F	29	67	1.7	23.2	0	NO
540	F	38	80	1.74	26.4	0	NO
541	F	62	63	1.6	24.6	0	NO
542	F	21	70	1.68	24.8	0	NO
543	F	26	82	1.7	28.4	0	NO
544	F	21	80	1.88	22.6	0	NO
545	F	32	70	1.63	26.3	0	NO
546	F	35	120	1.7	41.5	2	YES
547	F	28	80	1.65	29.4	0	NO
548	F	28	65	1.68	23	0	NO
549	M	68	109	1.71	37.3	0	NO
550	F	30	74	1.65	27.1	0	NO
551	F	30	60	1.68	21.3	0	NO
552	F	27	80	1.71	27.4	0	NO
553	F	62	68	1.64	25.3	1	NO
554	F	41	90	1.7	31.4	0	NO
555	M	70	68	1.65	25	2	NO
556	F	30	66	1.61	25.5	0	NO
557	M	50	72	1.66	26.1	0	NO
558	F	40	92	1.65	34.6	0	NO
559	F	25	71	1.76	22.9	0	NO
560	F	28	74	1.67	26.5	0	NO
561	F	37	76	1.7	26.3	0	NO
562	F	20	59	1.61	22.8	0	NO
563	F	41	61	1.67	21.9	0	NO
564	F	28	60	1.66	21.8	0	NO
565	F	28	71	1.6	27.7	0	NO
566	F	19	72	1.72	24.3	0	NO
567	F	28	75	1.6	29.3	0	NO
568	F	22	65	1.58	26	0	NO
569	F	26	60	1.66	21.8	0	NO

570	F	49	61	1.72	20.6	0	NO
571	F	60	60	1.67	21.5	0	NO
572	F	26	81	1.63	30.5	0	NO
573	F	28	81	1.69	28.4	0	NO
574	F	19	79	1.64	29.4	0	NO
575	F	32	75	1.82	22.6	0	NO
576	F	25	85	1.68	30.1	0	NO
577	F	21	65	1.62	24.8	0	NO
578	F	18	68	1.57	27.2	0	NO
579	F	18	64	1.68	22.7	0	NO
580	F	36	74	1.68	26.2	0	NO
581	F	23	77	1.73	25.7	0	NO
582	F	28	56	1.71	19.2	0	NO
583	F	40	59	1.66	21.4	0	NO
584	F	43	81	1.58	32.4	0	NO
585	F	35	67	1.58	26.8	0	NO
586	F	36	56	1.72	18.9	0	NO
587	F	35	87	1.67	31.2	3	YES
588	F	26	56	1.66	20.3	0	NO
589	F	33	77	1.7	26.6	0	NO
590	F	30	66	1.72	23.3	0	NO
591	F	28	55	1.62	21	0	NO
592	F	28	66	1.55	27.5	0	NO
593	M	38	105	1.72	35.5	0	NO
594	F	25	54	1.58	21.6	0	NO
595	M	28	75	1.8	23.1	0	NO
596	F	18	55	1.6	21.5	0	NO
597	F	24	59	1.7	20.4	0	NO
598	F	27	59	1.6	23	0	NO
599	F	20	55	1.6	21.5	0	NO
600	F	29	74	1.69	25.9	0	NO
601	F	30	85	1.78	26.8	0	NO
602	F	23	86	1.66	31.2	0	NO
603	F	41	110	1.7	38.1	0	NO
604	F	28	70	1.63	26.3	0	NO
605	F	25	71	1.63	26.7	0	NO
606	F	60	56	1.56	21.9	0	NO
607	F	36	56	1.64	20.8	0	NO
608	F	35	73	1.52	31.6	3	NO
609	F	32	66	1.63	24	0	NO
610	F	25	99	1.68	35.1	0	NO

611	F	35	71	1.65	26.1	0	NO
612	F	37	70	1.65	25.7	0	NO
613	M	62	64	1.62	24.4	0	NO
614	F	30	69	1.64	25.7	0	NO
615	F	28	74	1.64	27.5	0	NO
616	F	24	68	1.59	27	0	NO
617	M	67	59	1.62	22.5	0	NO
618	F	22	62	1.62	23.6	0	NO
619	F	28	70	1.7	24.2	0	NO
620	M	56	70	1.74	23.1	0	NO
621	M	26	74	1.68	26.2	0	NO
622	F	27	51	1.56	21	0	NO
623	F	30	78	1.62	29.7	0	NO
624	F	70	100	1.6	39.1	3	YES
625	F	40	82	1.7	28.4	1	NO
626	F	32	77	1.6	30.1	1	NO
627	F	31	71	1.8	21.9	0	NO
628	F	34	108	1.68	38.3	0	NO
629	F	33	58	1.58	23.2	0	NO
630	F	23	76	1.7	26.3	0	NO
631	M	27	60	1.62	22.9	0	NO
632	F	30	75	1.66	27.2	0	NO
633	F	39	66	1.62	25.1	0	NO
634	F	42	87	1.88	24.6	0	NO
635	F	33	70	1.58	28	0	NO
636	F	28	60	1.55	25	0	NO
637	M	44	58	1.75	19	0	NO
638	F	21	73	1.66	26.5	0	NO
639	F	35	66	1.64	24.5	0	NO
640	M	67	69	1.67	24.7	0	NO
641	F	48	79	1.6	30.9	0	NO
642	M	41	107	1.75	35	0	NO
643	F	46	95	1.7	32.9	0	NO
644	M	51	70	1.81	21.4	0	NO
645	F	25	61	1.56	25.1	0	NO
646	F	28	86	1.65	31.6	0	NO
647	F	27	110	1.6	43	0	NO
648	F	28	55	1.58	22	0	NO
649	F	27	65	1.55	27.1	0	NO
650	F	28	60	1.73	20	0	NO
651	F	21	69	1.73	23.1	0	NO

652	F	36	90	1.68	31.9	0	NO
653	F	27	66	1.56	27.1	0	NO
654	F	31	87	1.63	32.7	0	NO
655	F	29	70	1.65	25.7	0	NO
656	F	31	60	1.63	22.6	0	NO
657	M	38	74	1.71	25.3	0	NO
658	F	27	75	1.82	22.6	0	NO
659	F	27	74	1.66	26.9	0	NO
660	M	25	66	1.67	23.7	0	NO
661	M	54	78	1.76	25.2	0	NO
662	F	24	50	1.57	20.3	0	NO
663	F	28	79	1.62	30.1	0	NO
664	F	38	78	1.64	29	0	NO
665	F	31	60	1.58	24	0	NO
666	F	30	60	1.56	24.7	0	NO
667	M	61	52	1.58	20.8	0	NO
668	F	28	61	1.6	23.8	0	NO
669	F	32	120	1.7	41.5	0	NO
670	F	24	86	1.88	24.3	0	NO
671	F	25	73	1.7	25.3	0	NO
672	F	27	58	1.63	21.9	1	NO
673	F	24	60	1.62	22.9	0	NO
674	F	26	98	1.7	33.9	0	NO
675	M	21	73	1.76	23.6	0	NO
676	F	56	79	1.67	28.3	0	NO
677	M	81	66	1.68	23.4	0	NO
678	F	27	60	1.68	21.3	0	NO
679	F	18	67	1.68	23.7	0	NO
680	F	39	55	1.7	19	0	NO
681	M	34	84	1.69	29.4	0	NO
682	F	26	99	1.7	34.3	0	NO
683	F	24	71	1.57	28.8	0	NO
684	F	24	72	1.58	28.8	0	NO
685	F	28	70	1.64	26	0	NO
686	F	31	78	1.72	26.4	0	NO
687	F	25	84	1.61	32.5	0	NO
688	F	32	61	1.6	28.3	0	NO
689	F	28	63	1.56	25.9	0	NO
690	F	21	89	1.63	33.9	0	NO
691	F	29	53	1.62	20.1	0	NO
692	F	24	74	1.6	28.9	0	NO

693	F	34	88	1.71	30.1	0	NO
694	F	28	55	1.56	20.5	0	NO
695	F	23	100	1.73	33.4	0	NO
696	F	28	60	1.58	24	0	NO
697	F	38	91	1.63	34.3	0	NO
698	F	27	74	1.7	25.6	0	NO
699	F	30	84	1.6	32.8	0	NO
700	F	29	60	1.5	26.7	0	NO
701	F	26	69	1.56	28.4	0	NO
702	F	18	65	1.63	24.5	2	YES
703	F	38	75	1.63	28.2	0	NO
704	F	18	60	1.6	23.4	0	NO
705	F	27	64	1.63	24.1	0	NO
706	F	19	60	1.6	23.4	0	NO
707	F	31	71	1.64	26.4	0	NO
708	F	26	96	1.65	35.3	0	NO
709	F	27	68	1.6	26.6	0	NO
710	F	23	49	1.54	20.7	0	NO
711	F	32	95	1.68	33.7	0	NO
712	F	34	66	1.6	25.8	0	NO
713	M	38	70	1.78	22.1	0	NO
714	F	27	76	1.63	28.6	0	NO
715	F	68	66	1.6	24	1	NO
716	F	22	64	1.68	22.7	0	NO
717	F	31	66	1.6	25.8	0	NO
718	F	27	85	1.68	30.1	0	NO
719	F	25	60	1.54	25.3	0	NO
720	F	32	65	1.63	24.5	0	NO
721	F	22	60	1.65	22	0	NO
722	F	28	73	1.7	25.1	0	NO
723	F	23	68	1.7	23.5	0	NO
724	F	19	59	1.6	23	0	NO
725	F	35	82	1.6	32	0	NO
726	F	32	60	1.68	21.3	0	NO
727	F	30	59	1.62	22.5	0	NO
728	F	27	60	1.63	22.6	0	NO
729	F	25	68	1.63	25.6	0	NO
730	F	24	82	1.64	30.5	0	NO
731	F	26	73	1.63	27.5	0	NO
732	F	33	60	1.68	21.3	0	NO
733	F	27	71	1.62	27.1	0	NO

734	F	24	86	1.68	30.5	0	NO
735	F	20	60	1.6	23.4	0	NO
736	F	30	50	1.58	20	0	NO
737	F	26	75	1.68	26.6	0	NO
738	F	27	60	1.61	23.1	0	NO
739	F	28	120	1.78	37.9	0	NO
740	F	28	86	1.68	19.8	0	NO
741	F	62	65	1.65	23.9	0	NO
742	F	28	61	1.61	23.5	0	NO
743	F	31	67	1.58	24	0	NO
744	F	32	56	1.61	21.6	0	NO
745	M	32	95	1.59	37.6	0	NO
746	F	22	74	1.68	26.2	0	NO
747	F	46	66	1.6	25.8	0	NO
748	F	31	70	1.68	24.8	0	NO
749	F	36	90	1.75	29.4	0	NO
750	F	40	85	1.84	29.5	0	NO
751	F	32	80	1.68	28.3	0	NO
752	M	37	66	1.69	23.1	0	NO
753	F	27	69	1.68	24.4	0	NO
754	F	23	74	1.7	25.6	0	NO
755	M	44	65	1.8	20.1	0	NO
756	F	22	61	1.63	23	0	NO
757	F	40	60	1.6	23.4	0	NO
758	F	24	79	1.6	30.9	0	NO
759	F	28	73	1.58	30	0	NO
760	F	22	58	1.61	22.4	0	NO
761	F	35	70	1.58	28	0	NO
762	F	31	56	1.6	21.5	0	NO
763	F	37	59	1.63	22.2	0	NO
764	F	24	96	1.73	32.1	0	NO
765	F	32	92	1.62	35.1	0	NO
766	F	44	91	1.68	32.2	0	NO
767	F	26	72	1.67	25.8	0	NO
768	F	32	62	1.6	24.2	0	NO
769	M	42	65	1.72	22	0	NO
770	F	29	69	1.77	22	0	NO
771	F	25	60	1.5	7	0	NO
772	F	42	60	1.67	21.5	0	NO
773	M	46	75	1.65	27.5	0	NO
774	M	63	65	1.72	22	0	NO

775	M	46	75	1.76	24.2	1	NO
776	F	31	97	1.7	33.6	0	NO
777	F	35	55	1.51	24.1	0	NO
778	F	26	68	1.63	25.6	0	NO
779	F	30	59	1.65	21.7	0	NO
780	F	31	74	1.77	23.6	0	NO
781	F	39	59	1.6	23	0	NO
782	F	23	52	1.57	21.1	0	NO
783	F	23	62	1.6	24.2	0	NO
784	F	22	60	1.63	22.6	0	NO
785	F	46	55	1.58	22	0	NO
786	F	40	81	1.68	28.7	1	NO
787	F	46	68	1.58	27.2	0	NO
788	F	29	92	1.66	33.4	0	NO
789	F	30	63	1.6	24.6	0	NO
790	M	27	70	1.67	25.1	0	NO
791	F	32	56	1.55	23.3	0	NO
792	M	42	83	1.74	27.4	0	NO
793	M	87	59	1.64	21.9	0	NO
794	F	31	55	1.51	24.1	0	NO
795	F	21	69	1.68	24.4	0	NO
796	F	32	102	1.67	36.6	0	NO
797	F	42	70	1.58	28	0	NO
798	M	22	88	1.77	28.1	3	NO
799	M	30	78	1.82	23.5	0	NO
800	F	32	75	1.57	30.4	0	NO
801	F	40	70	1.75	22.9	0	NO
802	M	71	80	1.71	27.4	1	NO
803	F	20	59	1.7	20.4	0	NO
804	F	41	89	1.57	36.1	0	NO
805	F	27	76	1.56	31.2	0	NO
806	F	40	65	1.56	26.7	0	NO
807	F	32	80	1.83	23.9	0	NO
808	F	25	66	1.63	24.8	0	NO
809	M	23	66	1.7	22.8	0	NO
810	F	50	50	1.6	19.5	0	NO
811	F	27	60	1.55	25	0	NO
812	F	24	61	1.62	23.2	0	NO
813	F	38	55	1.68	19.5	0	NO
814	F	36	85	1.8	26.2	0	NO
815	F	45	80	1.7	27.7	0	NO

816	F	24	64	1.53	27.3	0	NO
817	F	36	59	1.59	23.3	0	NO
818	F	37	95	1.72	32.1	0	NO
819	F	29	66	1.66	24	0	NO
820	F	22	65	1.63	24.5	0	NO
821	F	20	62	1.53	26.5	0	NO
822	F	45	60	1.52	26	0	NO
823	M	18	60	1.62	22.9	0	NO
824	F	41	80	1.69	28	0	NO
825	F	45	58	1.57	23.5	0	NO
826	F	42	86	1.68	30.5	0	NO
827	F	42	64	1.52	27.7	0	NO
828	F	21	60	1.64	22.3	0	NO
829	F	28	59	1.53	25.2	0	NO
830	F	32	82	1.54	30.5	0	NO
831	F	33	62	1.58	24.8	0	NO
832	F	28	68	1.6	26.6	0	NO
833	M	23	56	1.7	19.4	0	NO
834	F	23	69	1.65	25.3	0	NO
835	F	28	68	1.58	27.2	0	NO
836	F	27	70	1.63	26.3	0	NO
837	F	38	74	1.62	28.1	0	NO
838	F	23	89	1.72	30.1	0	NO
839	F	25	74	1.68	26.2	0	NO
840	F	25	71	1.73	23.7	0	NO
841	F	24	74	1.73	24.7	0	NO
842	F	27	64	1.65	23.5	0	NO
843	F	28	70	1.68	24.8	0	NO
844	M	24	80	1.7	27.7	0	NO
845	F	30	61	1.63	23	0	NO
846	F	47	64	1.61	24.7	1	NO
847	F	22	66	1.57	26.8	0	NO
848	F	20	69	1.53	29.5	0	NO
849	F	36	120	1.83	35.8	0	NO
850	F	30	65	1.61	25.1	0	NO
851	F	25	76	1.6	27.3	0	NO
852	F	21	52	1.55	21.6	0	NO
853	F	29	64	1.6	25	0	NO
854	F	26	86	1.71	29.4	0	NO
855	F	23	64	1.64	23.8	0	NO
856	F	23	76	1.66	27.5	0	NO

857	F	27	60	1.49	27	0	NO
858	F	43	68	1.64	25.3	0	NO
859	F	30	74	1.59	29.3	0	NO
860	F	29	75	1.68	26.6	0	NO
861	F	29	82	1.66	29.8	0	NO
862	F	24	61	1.63	21	0	NO
863	F	33	64	1.55	26.6	0	NO
864	F	33	110	1.68	39.1	0	NO
865	M	35	86	1.72	29.1	0	NO
866	F	35	76	1.66	27.5	0	NO
867	F	34	62	1.54	26.1	0	NO
868	F	24	88	1.7	30.4	0	NO
869	F	27	68	1.67	24.3	0	NO
870	M	30	76	1.67	27.3	0	NO
871	F	24	70	1.63	26.3	0	NO
872	F	23	61	1.61	23.5	0	NO
873	F	22	70	1.58	28	0	NO
874	F	27	60	1.57	24.3	0	NO
875	F	35	72	1.65	26.4	0	NO
876	F	26	81	1.63	30.5	0	NO
877	F	47	74	1.63	27.9	0	NO
878	F	55	50	1.5	22.2	0	NO
879	F	42	75	1.5	33	0	NO
880	F	29	70	1.7	24.2	0	NO
881	M	38	65	1.68	23	0	NO
882	M	32	70	1.66	25.4	0	NO
883	F	19	63	1.63	23.7	0	NO
884	F	27	71	1.7	24.6	0	NO
885	F	32	95	1.62	19.6	0	NO
886	F	24	55	1.59	25.4	0	NO
887	F	25	44	1.5	19.6	0	NO
888	F	27	65	1.6	1.6	0	NO
889	F	30	59	1.44	28.5	0	NO
890	F	36	60	1.64	22.3	0	NO
891	F	40	70	1.67	25.1	0	NO
892	F	23	64	1.57	26	0	NO
893	F	28	92	1.74	30.4	0	NO
894	F	32	68	1.66	24.7	0	NO
895	F	20	53	1.6	20.7	0	NO
896	M	27	86	1.7	29.8	0	NO
897	F	24	59	1.55	24.6	0	NO

898	F	29	65	1.53	27.8	0	NO
899	F	35	68	1.55	28.3	0	NO
900	F	22	69	1.76	22.3	0	NO
901	F	26	60	1.64	22.3	0	NO
902	F	20	69	1.63	26	0	NO
903	F	26	90	1.74	29.6	0	NO
904	F	28	63	1.59	24.9	0	NO
905	F	37	103	1.63	38.8	1	YES
906	F	27	75	1.69	26.3	0	NO
907	F	36	63	1.64	23.4	0	NO
908	M	22	62	1.71	21.2	0	NO
909	F	34	64	1.66	23.2	0	NO
910	F	28	66	1.64	24.5	0	NO
911	F	36	65	1.64	24.1	0	NO
912	M	70	84	1.63	31.6	0	NO
913	F	36	78	1.63	29.4	0	NO
914	F	26	70	1.8	21.6	0	NO
915	F	39	109	1.67	39.1	0	NO
916	M	33	93	1.73	31.1	0	NO
917	M	33	66	1.64	24.5	0	NO
918	F	18	68	1.7	23.5	0	NO
919	F	37	70	1.6	27.3	1	NO
920	F	81	75	1.68	26.6	0	NO
921	F	24	40	1.38	21	0	NO
922	F	70	73	1.7	25.3	0	NO
923	F	29	68	1.59	26.9	0	NO
924	F	37	63	1.61	24.3	0	NO
925	F	31	81	1.7	28.1	0	NO
926	M	85	70	1.64	26	2	YES
927	F	19	68	1.59	26.9	0	NO
928	F	22	64	1.6	25	0	NO
929	F	51	72	1.66	26.1	0	NO
930	M	60	81	1.7	28	0	NO
931	F	27	60	1.55	25	0	NO
932	F	20	65	1.6	25.4	0	NO
933	F	60	67	1.65	24.6	0	NO
934	F	55	64	1.72	21.6	0	NO
935	F	22	60	1.5	26.7	0	NO
936	F	28	67	1.63	25.2	0	NO
937	F	32	60	1.67	21.5	0	NO
938	F	37	63	1.7	21.8	0	NO

939	F	20	55	1.43	26.9	0	NO
940	F	32	60	1.77	19.2	0	NO
941	F	75	60	1.62	22.9	2	NO
942	F	38	71	1.65	26	0	NO
943	F	21	60	1.57	24.3	0	NO
944	F	19	58	1.53	24.8	0	NO
945	F	27	62	1.69	21.7	0	NO
946	F	44	73	1.6	28.5	0	NO
947	M	31	68	1.58	27.2	0	NO
948	F	37	71	1.63	26.7	0	NO
949	F	25	60	1.68	21.3	0	NO
950	M	20	63	1.6	24.6	0	NO
951	F	24	58	1.53	24.8	0	NO
952	F	18	60	1.5	26.7	0	NO
953	F	54	65	1.63	24.5	0	NO
954	F	28	61	1.64	22.7	0	NO
955	F	65	63	1.58	25.2	0	NO
956	F	33	60	1.6	23.4	0	NO
957	F	29	67	1.65	24.6	0	NO
958	F	50	115	1.71	39.3	0	NO
959	F	48	80	1.65	29.4	0	NO
960	F	64	72	1.68	25.5	0	NO
961	F	70	69	1.63	26	0	NO
962	F	62	60	1.61	23.1	0	NO
963	M	45	65	1.68	23	0	NO
964	M	83	68	1.67	24.4	1	YES
965	F	23	70	1.61	27	0	NO
966	F	31	64	1.7	22.1	0	NO
967	M	48	112	1.71	38.3	0	NO
968	F	56	72	1.64	26.8	0	NO
969	M	48	68	1.67	24.4	0	NO
970	F	21	70	1.66	25.4	0	NO
971	F	33	63	1.6	24.6	0	NO
972	F	60	60	1.53	25.6	0	NO
973	F	51	64	1.61	24.7	0	NO
974	F	62	71	1.63	26.7	0	NO
975	F	59	66	1.6	25.8	0	NO
976	F	61	60	1.61	23.1	0	NO
977	F	80	71	1.65	26.1	0	NO
978	F	81	60	1.58	24	0	NO
979	F	57	100	1.7	34.6	0	NO

980	F	27	63	1.58	25.2	0	NO
981	F	23	60	1.64	22.3	0	NO
982	M	22	65	1.6	25.4	0	NO
983	F	41	70	1.67	25.1	0	NO
984	F	36	60	1.63	22.6	0	NO
985	F	30	65	1.66	23.6	0	NO
986	F	53	80	1.68	28.3	0	NO
987	F	22	56	1.7	19.4	0	NO
988	M	33	60	1.7	20.8	0	NO
989	F	51	119	1.67	42.7	0	NO
990	F	23	55	1.67	19.7	0	NO
991	F	64	70	1.62	26.7	0	NO
992	F	21	70	1.61	27	0	NO
993	F	33	80	1.7	27.7	0	NO
994	F	18	63	1.6	24.6	0	NO
995	F	35	65	1.6	25.4	0	NO
996	F	41	110	1.66	39.9	1	YES
997	F	87	65	1.63	24.5	0	NO
998	F	27	60	1.68	21.3	0	NO
999	F	25	70	1.64	26	0	NO
1000	F	29	83	1.67	29.8	0	NO
1001	F	24	70	1.66	29.4	0	NO
1002	F	20	67	1.64	24.9	2	YES
1003	M	40	74	1.6	28.9	0	NO
1004	F	27	60	1.58	24	0	NO
1005	F	37	62	1.6	24.2	0	NO
1006	F	20	61	1.65	22.4	0	NO
1007	F	30	73	1.61	28.2	0	NO
1008	F	26	98	1.67	35.1	0	NO
1009	F	26	68	1.6	26.6	0	NO
1010	F	23	50	1.56	20.5	0	NO
1011	F	32	100	1.71	34.1	0	NO
1012	F	34	88	1.66	31.9	0	NO
1013	M	38	70	1.78	22.1	0	NO
1014	F	27	76	1.63	28.6	0	NO
1015	F	68	66	1.6	25.8	0	NO
1016	F	22	64	1.68	22.7	0	NO
1017	F	31	66	1.6	25.8	0	NO
1018	F	27	85	1.68	30.1	0	NO
1019	F	25	60	1.54	25.3	0	NO
1020	F	32	65	1.63	24.5	0	NO

1021	F	22	60	1.65	22	0	NO
1022	F	28	73	1.7	25.3	0	NO
1023	F	23	68	1.7	23.5	0	NO
1024	F	19	59	1.6	23	0	NO
1025	F	35	82	1.6	32	0	NO
1026	F	32	60	1.68	21.3	0	NO
1027	F	30	99	1.62	37.7	0	NO
1028	F	27	69	1.63	26	0	NO
1029	F	25	68	1.63	25.6	0	NO
1030	F	24	82	1.64	30.5	0	NO
1031	F	26	73	1.63	27.5	0	NO
1032	F	33	90	1.68	31.9	0	NO
1033	F	27	71	1.67	25.5	0	NO
1034	F	24	86	1.68	30.5	0	NO
1035	F	20	96	1.6	37.5	0	NO
1036	F	30	115	1.66	41.7	1	NO
1037	F	26	75	1.68	26.6	0	NO
1038	F	27	60	1.62	22.9	0	NO
1039	F	28	120	1.78	37.8	0	NO
1040	F	28	86	1.68	28.3	0	NO
1041	F	62	65	1.65	23.9	0	NO
1042	F	28	91	1.61	35.1	0	NO
1043	F	31	61	1.58	24.4	0	NO
1044	F	32	86	1.61	33.2	0	NO
1045	M	67	95	1.69	33.3	0	NO
1046	F	22	74	1.66	26.9	0	NO
1047	F	46	56	1.6	21.9	0	NO
1048	F	31	120	1.68	42.5	2	NO
1049	F	36	90	1.64	33.5	0	NO
1050	F	40	85	1.84	25.1	0	NO
1051	F	32	80	1.68	28.3	0	NO
1052	M	37	66	1.69	23.1	0	NO
1053	F	27	79	1.68	28	0	NO
1054	F	23	74	1.7	25.6	0	NO
1055	M	44	105	1.8	32.4	0	NO
1056	F	22	61	1.63	23	0	NO
1057	F	40	70	1.66	25.4	0	NO
1058	F	24	79	1.8	24.4	0	NO
1059	F	28	75	1.58	30	0	NO
1060	F	22	58	1.61	22.4	0	NO
1061	F	35	60	1.58	24	0	NO

1062	F	31	115	1.7	39.8	0	NO
1063	F	37	55	1.63	20.7	0	NO
1064	F	24	66	1.73	22.1	0	NO
1065	F	30	70	1.62	26.7	0	NO
1066	F	42	95	1.84	28	0	NO
1067	F	25	86	1.7	58.8	0	NO
1068	F	30	62	1.63	23.3	0	NO
1069	M	42	67	1.7	23.2	0	NO
1070	F	29	105	1.77	35.5	0	NO
1071	F	25	60	1.55	25	0	NO
1072	F	42	62	1.67	22.2	0	NO
1073	M	65	75	1.66	27.2	0	NO
1074	M	63	76	1.72	25.3	0	NO
1075	M	46	105	1.76	33.9	1	YES
1076	F	31	79	1.8	24.4	0	NO
1077	F	35	51	1.57	20.7	0	NO
1078	F	26	88	1.73	29.4	0	NO
1079	F	30	59	1.65	21.7	0	NO
1080	F	31	70	1.78	22.1	0	NO
1081	F	40	82	1.71	28	0	NO
1082	F	23	52	1.57	21.1	0	NO
1083	F	28	60	1.65	22	0	NO
1084	F	22	60	1.63	22.6	0	NO
1085	F	46	93	1.7	32.2	0	NO
1086	F	40	61	1.68	21.6	1	NO
1087	F	42	115	1.8	35.5	0	NO
1088	F	30	55	1.66	20	0	NO
1089	F	34	82	1.84	24.2	0	NO
1090	M	27	70	1.67	25	0	NO
1091	F	32	56	1.6	21.9	0	NO
1092	M	43	60	1.65	22	0	NO
1093	M	87	59	1.65	21.7	0	NO
1094	F	31	55	1.53	23.5	0	NO
1095	F	21	70	1.68	24.8	0	NO
1096	F	32	62	1.67	22.2	0	NO
1097	F	42	71	1.6	27.7	3	NO
1098	M	22	88	1.79	27.5	0	NO
1099	M	27	72	1.71	24.6	0	NO
1100	F	35	70	1.66	25.4	0	NO
1101	F	40	70	1.65	25.7	0	NO
1102	M	71	80	1.75	26.1	1	NO

1103	F	20	59	1.7	20.4	0	NO
1104	F	41	87	1.57	36.1	0	NO
1105	F	25	73	1.66	26.5	0	NO
1106	F	39	68	1.58	27.2	0	NO
1107	F	30	80	1.83	23.9	0	NO
1108	F	27	116	1.73	38.8	0	NO
1109	M	25	68	1.7	23.5	0	NO
1110	F	48	56	1.61	21.6	0	NO
1111	F	28	63	1.59	24.9	0	NO
1112	F	26	54	1.65	19.8	0	NO
1113	F	36	56	1.7	19.4	0	NO
1114	F	40	84	1.82	25.4	0	NO
1115	F	43	80	1.85	23.4	0	NO
1116	F	24	68	1.55	28.3	0	NO
1117	F	35	72	1.66	26.1	0	NO
1118	F	38	95	1.72	31.7	1	YES
1119	F	29	66	1.66	24	0	NO
1120	F	22	85	1.63	32	0	NO
1121	F	20	62	1.58	24.8	0	NO
1122	F	45	60	1.52	26	0	NO
1123	M	18	60	1.63	22.6	0	NO
1124	F	41	70	1.67	25.1	0	NO
1125	F	25	58	1.57	23.5	0	NO
1126	F	42	86	1.68	30.5	0	NO
1127	F	44	65	1.66	23.6	0	NO
1128	F	21	60	1.64	22.3	0	NO
1129	F	28	58	1.57	23.5	0	NO
1130	F	32	82	1.56	33.7	0	NO
1131	F	35	55	1.6	21.5	0	NO
1132	F	28	68	1.63	25.6	0	NO
1133	F	30	67	1.78	21.1	0	NO
1134	F	23	70	1.66	25.4	0	NO
1135	F	28	74	1.68	26.2	0	NO
1136	F	30	70	1.83	20.9	0	NO
1137	F	38	78	1.68	27.6	0	NO
1138	F	23	89	1.72	30.1	0	NO
1139	F	25	74	1.82	22.6	0	NO
1140	F	28	91	1.72	30.8	0	NO
1141	F	24	74	1.76	23.8	0	NO
1142	F	27	64	1.65	23.5	0	NO
1143	F	28	70	1.68	24.8	0	NO

1144	M	24	80	1.74	26.4	0	NO
1145	F	30	61	1.63	23	0	NO
1146	F	47	84	1.71	28.7	1	NO
1147	F	22	66	1.57	26.8	0	NO
1148	F	20	69	1.85	20.1	0	NO
1149	F	36	120	1.83	35.8	0	NO
1150	F	30	60	1.61	23.1	0	NO
1151	F	25	76	1.66	27.6	0	NO
1152	F	21	52	1.55	21.6	0	NO
1153	F	29	64	1.6	25	0	NO
1154	F	26	86	1.67	30.8	0	NO
1155	F	23	64	1.64	23.8	0	NO
1156	F	23	70	1.68	24.8	0	NO
1157	F	27	60	1.49	27	0	NO
1158	F	43	68	1.64	25.3	0	NO
1159	F	30	74	1.59	29.3	0	NO
1160	F	29	75	1.68	26.6	0	NO
1161	F	26	80	1.81	24.4	0	NO
1162	F	24	61	1.63	22.9	0	NO
1163	F	33	64	1.85	18.7	0	NO
1164	F	33	116	1.68	41.1	2	NO
1165	M	35	86	1.72	29.1	0	NO
1166	F	35	80	1.75	26.1	0	NO
1167	F	27	60	1.69	21	0	NO
1168	F	24	88	1.7	30.4	0	NO
1169	F	27	68	1.67	24.4	0	NO
1170	M	30	76	1.66	27.6	0	NO
1171	F	24	70	1.68	24.8	0	NO
1172	F	23	61	1.61	23.5	0	NO
1173	F	22	70	1.58	28	0	NO
1174	F	27	60	1.57	24.3	0	NO
1175	F	35	72	1.85	21	0	NO
1176	F	26	81	1.73	27	0	NO
1177	F	47	64	1.63	24	0	NO
1178	F	55	50	1.55	20.8	0	NO
1179	F	42	75	1.66	27.2	0	NO
1180	F	29	70	1.7	24.2	0	NO
1181	M	38	65	1.68	23	0	NO
1182	M	32	70	1.66	25.4	0	NO
1183	F	19	63	1.63	23.7	0	NO
1184	F	27	71	1.7	24.6	0	NO

1185	F	32	95	1.72	32.1	0	NO
1186	F	24	55	1.59	21.8	0	NO
1187	F	25	54	1.55	23.7	0	NO
1188	F	27	65	1.6	25.4	0	NO
1189	F	30	59	1.64	21.9	0	NO
1190	F	36	90	1.84	26.6	0	NO
1191	F	40	80	1.77	25.5	0	NO
1192	F	23	64	1.57	26	0	NO
1193	F	28	92	1.74	30.4	0	NO
1194	F	32	68	1.67	24.4	0	NO
1195	F	20	53	1.6	20.7	0	NO
1196	M	27	86	1.7	29.8	0	NO
1197	F	24	89	1.75	29.1	0	NO
1198	F	29	65	1.63	24.5	0	NO
1199	F	35	61	1.55	25.4	0	NO
1200	F	22	69	1.76	22.3	0	NO
1201	F	26	100	1.74	33	1	NO
1202	F	20	65	1.65	23.9	0	NO
1203	F	26	90	1.84	26.6	0	NO
1204	F	28	63	1.59	24.9	0	NO
1205	F	37	103	1.7	35.6	1	YES
1206	F	22	75	1.68	26.6	0	NO
1207	F	36	63	1.64	23.4	0	NO
1208	M	22	62	1.71	21.2	0	NO
1209	F	34	64	1.6	25	0	NO
1210	F	28	66	1.64	24.5	0	NO
1211	F	36	65	1.64	24.2	0	NO
1212	M	70	59	1.63	22.2	0	NO
1213	F	36	78	1.69	27.3	0	NO
1214	F	36	70	1.8	21.6	0	NO
1215	F	39	109	1.68	38.6	0	NO
1216	M	39	93	1.73	31.1	0	NO
1217	F	55	79	1.8	24.4	1	YES
1218	F	37	70	1.71	23.9	0	NO
1219	F	21	63	1.67	22.6	0	NO
1220	F	32	60	1.61	23.1	1	NO
1221	F	38	107	1.79	33.4	0	NO
1222	F	31	85	1.76	27.4	0	NO
1223	F	29	75	1.62	28.6	0	NO
1224	F	27	67	1.71	22.9	0	NO
1225	F	32	70	1.6	27.3	0	NO

1226	M	36	86	1.74	28.4	0	NO
1227	F	27	97	1.7	33.6	0	NO
1228	F	34	90	1.68	31.9	0	NO
1229	F	23	72	1.7	24.9	0	NO
1230	M	20	67	1.63	25.2	0	NO
1231	F	59	108	1.7	37.4	0	NO
1232	F	31	68	1.66	24.7	0	NO
1233	F	36	60	1.6	23.4	0	NO
1234	F	67	89	1.72	30.1	0	NO
1235	F	24	67	1.62	25.5	0	NO
1236	F	33	70	1.65	25.7	0	NO
1237	F	28	100	1.78	31.6	0	NO
1238	F	29	74	1.83	22.1	0	NO
1239	F	32	75	1.65	27.5	0	NO
1240	F	23	76	1.66	27.6	0	NO
1241	F	32	93	1.67	33.3	0	NO
1242	F	23	64	1.49	28.8	2	NO
1243	F	25	70	1.68	24.8	0	NO
1244	F	29	79	1.66	28.7	0	NO
1245	M	60	91	1.72	30.8	0	NO
1246	F	25	71	1.74	23.5	0	NO
1247	F	22	75	1.67	26.9	0	NO
1248	F	27	80	1.7	27.7	0	NO
1249	F	28	95	1.78	30	0	NO
1250	F	50	80	1.65	29.4	0	NO
1251	F	38	70	1.66	25.4	0	NO
1252	F	33	72	1.65	26.4	0	NO
1253	F	33	130	1.72	44	1	NO
1254	F	36	69	1.6	27	0	NO
1255	F	27	64	1.72	21.6	0	NO
1256	F	20	66	1.65	24.2	0	NO
1257	F	35	80	1.73	26.7	0	NO
1258	F	19	65	1.58	26	0	NO
1259	F	20	68	1.65	25	0	NO
1260	F	24	68	1.68	31.2	0	NO
1261	F	28	70	1.68	24.8	0	NO
1262	F	33	91	1.66	33	0	NO
1263	F	34	66	1.68	23.4	0	NO
1264	F	30	80	1.68	28.3	0	NO
1265	F	24	65	1.58	26	0	NO
1266	M	62	68	1.7	23.5	0	NO

1267	F	31	78	1.66	28.3	0	NO
1268	F	28	25	1.72	42.1	1	NO
1269	F	26	80	1.72	27	0	NO
1270	F	36	68	1.7	23.5	1	NO
1271	F	41	90	1.8	27.7	0	NO
1272	M	76	68	1.63	25.6	0	NO
1273	F	29	64	1.63	24.1	0	NO
1274	M	51	75	1.67	26.9	0	NO
1275	F	41	95	1.68	33	0	NO
1276	F	27	98	1.78	7	0	NO
1277	F	28	74	1.67	30.9	0	NO
1278	F	27	76	1.7	26.5	0	NO
1279	F	21	59	1.64	26.3	0	NO
1280	F	41	95	1.67	21.9	0	NO
1281	F	28	63	1.65	34.1	0	NO
1282	F	19	72	1.72	23.1	0	NO
1283	F	28	60	1.66	24	0	NO
1284	F	28	75	1.6	21.8	0	NO
1285	F	22	65	1.58	29.3	0	NO
1286	F	26	60	1.66	26	0	NO
1287	F	45	61	1.72	21.8	0	NO
1288	F	20	60	1.67	20.6	0	NO
1289	F	26	81	1.68	21.5	0	NO
1290	F	28	81	1.59	28.7	0	NO
1291	F	19	79	1.69	32	0	NO
1292	F	32	75	1.62	27.7	0	NO
1293	F	25	85	1.68	28.6	0	NO
1294	F	21	65	1.62	30.1	0	NO
1295	F	20	68	1.57	24.8	0	NO
1296	F	23	64	1.68	27.2	0	NO
1297	F	26	74	1.68	27.7	0	NO
1298	F	23	77	1.73	26.2	0	NO
1299	F	28	56	1.71	25.7	0	NO
1300	F	40	59	1.56	19.1	0	NO
1301	F	43	81	1.58	24.2	0	NO
1302	F	35	71	1.58	32.4	0	NO
1303	F	36	56	1.72	20.1	0	NO
1304	F	35	87	1.67	18.9	3	NO
1305	F	26	86	1.66	31.2	0	NO
1306	F	33	77	1.7	26.6	0	NO
1307	F	30	66	1.72	22.3	0	NO

1308	F	28	55	1.62	21	0	NO
1309	F	28	66	1.55	27.5	0	NO
1310	M	38	105	1.72	35.5	0	NO
1311	F	25	54	1.58	21.6	0	NO
1312	M	28	75	1.8	23.1	0	NO
1313	F	21	55	1.6	21.5	0	NO
1314	F	24	59	1.7	20.4	0	NO
1315	F	27	59	1.6	23	0	NO
1316	F	20	55	1.65	20.3	0	NO
1317	F	29	74	1.69	25.9	0	NO
1318	F	30	85	1.78	26.8	0	NO
1319	F	23	86	1.66	31.2	0	NO
1320	F	41	110	1.7	38.1	0	NO
1321	F	28	70	1.63	26.3	0	NO
1322	F	25	71	1.63	26.7	0	NO
1323	F	60	56	1.56	23	0	NO
1324	F	36	96	1.74	31.7	0	NO
1325	F	35	73	1.58	29.2	3	NO
1326	F	32	116	1.76	37.4	0	NO
1327	F	25	99	1.68	35	0	NO
1328	F	35	71	1.65	26.1	0	NO
1329	F	37	70	1.65	25.7	0	NO
1330	M	62	64	1.62	24.4	0	NO
1331	F	30	69	1.64	25.6	0	NO
1332	F	28	74	1.64	27.9	0	NO
1333	F	24	68	1.55	28.3	0	NO
1334	M	67	59	1.62	22.4	0	NO
1335	F	22	62	1.62	23.6	0	NO
1336	F	28	70	1.7	24.2	0	NO
1337	M	56	70	1.74	23.1	0	NO
1338	M	26	74	1.68	26.2	0	NO
1339	F	27	51	1.56	21	0	NO
1340	F	30	78	1.62	29.7	0	NO
1341	F	70	100	1.68	35.4	3	YES
1342	F	34	59	1.68	20.9	0	NO
1343	F	23	76	1.7	26.3	0	NO
1344	F	40	82	1.7	26.6	1	NO
1345	F	32	77	1.65	28.3	1	NO
1346	F	31	71	1.8	21.9	0	NO
1347	F	33	58	1.58	23.2	0	NO
1348	M	27	60	1.62	22.9	0	NO

1349	F	30	75	1.6	29.3	0	NO
1350	F	39	66	1.62	25.1	0	NO
1351	F	42	67	1.58	26.8	0	NO
1352	F	33	76	1.68	26.9	0	NO
1353	M	28	60	1.55	25	0	NO
1354	F	19	48	1.5	21.3	0	NO
1355	F	21	73	1.6	28.5	0	NO
1356	M	35	66	1.64	24.5	0	NO
1357	M	67	69	1.61	26.6	0	NO
1358	F	48	79	1.6	30.9	0	NO
1359	M	41	107	1.75	34.9	0	NO
1360	F	40	95	1.7	32.9	0	NO
1361	M	51	70	1.81	21.4	0	NO
1362	F	25	61	1.55	25.4	0	NO
1363	F	28	80	1.69	33.3	0	NO
1364	F	27	110	1.7	38.1	1	YES
1365	F	28	55	1.58	22	0	NO
1366	F	33	55	1.62	20.9	0	NO
1367	F	80	115	1.83	34.3	0	NO
1368	F	21	69	1.71	23.6	0	NO
1369	F	36	90	1.68	31.9	0	NO
1370	F	32	66	1.56	27.1	0	NO
1371	F	35	60	1.65	22	0	NO
1372	F	29	76	1.7	26.3	0	NO
1373	F	31	58	1.63	21.8	0	NO
1374	M	38	74	1.71	25.3	0	NO
1375	F	27	78	1.7	27	0	NO
1376	F	27	74	1.66	26.9	0	NO
1377	M	25	66	1.68	23.4	0	NO
1378	M	54	78	1.7	27	0	NO
1379	F	30	55	1.6	21.5	0	NO
1380	F	35	65	1.65	23.9	0	NO
1381	F	38	78	1.69	27.3	0	NO
1382	F	35	65	1.62	24.8	0	NO
1383	F	30	60	1.56	24.7	0	NO
1384	M	70	58	1.6	22.7	0	NO
1385	F	28	60	1.63	22.6	0	NO
1386	F	35	100	1.65	36.7	0	NO
1387	F	26	81	1.8	25	0	NO
1388	F	29	73	1.7	25.3	1	NO
1389	F	25	68	1.63	25.6	0	NO

1390	F	22	60	1.65	22	0	NO
1391	F	28	100	1.75	32.7	0	NO
1392	M	25	63	1.7	21.8	0	NO
1393	F	59	76	1.67	27.3	0	NO
1394	M	87	70	1.65	25.7	0	NO
1395	F	29	65	1.63	24.5	0	NO
1396	F	21	67	1.7	23.2	0	NO
1397	F	40	87	1.7	30.1	0	NO
1398	M	35	81	1.7	28	0	NO
1399	F	26	100	1.65	36.7	0	NO
1400	F	25	71	1.8	21.9	0	NO
1401	F	24	75	1.6	29.3	0	NO
1402	F	30	65	1.67	23.3	0	NO
1403	F	35	78	1.7	27	0	NO
1404	F	30	85	1.65	31.2	0	NO
1405	F	32	81	1.6	31.6	0	NO
1406	F	30	67	1.6	26.2	0	NO
1407	F	24	89	1.68	31.5	0	NO
1408	F	32	95	1.81	29	0	NO
1409	F	28	71	1.68	25.2	0	NO
1410	F	34	90	1.75	29.4	0	NO
1411	F	28	60	1.55	25	0	NO
1412	F	21	115	1.7	39.8	0	NO
1413	F	25	53	1.52	23	0	NO
1414	F	38	95	1.78	30	0	NO
1415	F	30	78	1.68	27.6	1	NO
1416	F	35	81	1.83	24.2	0	NO
1417	F	32	76	1.65	27.9	0	NO
1418	F	26	60	1.6	23.4	0	NO
1419	F	22	67	1.65	24.6	0	NO
1420	M	39	72	1.73	24.1	0	NO
1421	F	27	64	1.65	23.5	2	NO
1422	F	19	61	1.69	21.4	0	NO
1423	F	34	75	1.7	26	0	NO
1424	F	28	81	1.85	23.7	0	NO
1425	F	26	68	1.62	25.9	0	NO
1426	F	30	63	1.7	21.8	0	NO
1427	F	23	50	1.6	19.5	0	NO
1428	F	42	91	1.73	30.4	0	NO
1429	F	34	88	1.7	30.4	0	NO
1430	M	40	75	1.71	25.6	0	NO

1431	F	32	73	1.65	26.8	0	NO
1432	F	68	71	1.69	24.9	1	NO
1433	F	43	66	1.57	26.8	0	NO
1434	F	31	72	1.6	28.1	0	NO
1435	F	22	85	1.68	30.1	0	NO
1436	F	28	63	1.61	24.3	0	NO
1437	F	34	68	1.67	24.4	0	NO
1438	F	25	62	1.65	22.8	0	NO
1439	F	28	71	1.7	24.6	0	NO
1440	F	23	68	1.68	24.1	0	NO
1441	F	19	55	1.65	20.2	0	NO
1442	F	36	70	1.63	26.3	0	NO
1443	F	32	62	1.57	25.2	1	NO
1444	F	39	84	1.65	30.9	0	NO
1445	M	25	62	1.67	22.2	0	NO
1446	F	30	67	1.63	25.2	0	NO
1447	F	24	82	1.67	29.4	0	NO
1448	F	28	71	1.84	21	0	NO
1449	F	33	90	1.68	31.9	0	NO
1450	F	21	60	1.55	25	0	NO
1451	F	27	88	1.69	30.8	0	NO
1452	F	20	90	1.8	27.8	0	NO
1453	F	30	110	1.68	39	1	NO
1454	F	26	75	1.67	26.9	0	NO
1455	F	32	63	1.63	23.7	0	NO
1456	F	38	120	1.88	34	1	NO
1457	F	40	86	1.7	29.8	0	NO
1458	F	62	65	1.65	24.2	0	NO
1459	F	28	94	1.81	28.7	0	NO
1460	F	22	75	1.57	30.4	0	NO
1461	F	38	84	1.72	28.4	0	NO
1462	M	64	63	1.65	23.1	0	NO
1463	F	22	74	1.65	27.2	0	NO
1464	F	50	82	1.67	29.4	0	NO
1465	F	34	120	1.7	41.5	0	NO
1466	F	37	83	1.75	27.1	0	NO
1467	F	42	78	1.7	27	0	NO
1468	F	35	72	1.69	25.2	0	NO
1469	F	27	62	1.65	22.8	0	NO
1470	M	28	70	1.73	23.4	0	NO
1471	M	65	75	1.65	27.5	1	NO

1472	F	29	67	1.68	23.7	0	NO
1473	M	44	109	1.83	32.5	0	NO
1474	F	28	64	1.6	25	0	NO
1475	F	42	69	1.63	26	0	NO
1476	F	26	72	1.61	27.8	0	NO
1477	F	22	78	1.65	28.7	0	NO
1478	F	37	74	1.63	27.9	0	NO
1479	F	40	97	1.64	36.1	0	NO
1480	F	25	60	1.57	28.4	0	NO
1481	F	34	70	1.64	26	0	NO
1482	F	35	65	1.6	25.4	0	NO
1483	M	45	70	1.62	26.7	0	NO
1484	F	28	61	1.5	27.1	0	NO
1485	F	32	107	1.55	31.3	0	NO
1486	F	28	64	1.57	26	0	NO
1487	F	38	115	1.7	40	0	NO
1488	M	46	70	1.65	25.7	0	NO
1489	M	63	65	1.72	22	0	NO
1490	M	46	105	1.7	36.3	1	NO
1491	F	33	65	1.64	24.2	0	NO
1492	F	38	60	1.53	25.6	0	NO
1493	F	22	76	1.65	27.9	0	NO
1494	F	31	64	1.7	22.1	0	NO
1495	F	40	72	1.65	26.4	0	NO
1496	F	25	58	1.55	24.1	0	NO
1497	F	35	66	1.65	24.2	0	NO
1498	F	28	60	1.71	20.5	0	NO
1499	F	46	67	1.6	26.2	0	NO
1500	F	32	84	1.65	30.9	1	NO
1501	F	50	60	1.58	24	0	NO
1502	F	32	70	1.6	27.3	0	NO
1503	F	30	65	1.63	24.5	0	NO
1504	M	30	65	1.62	24.8	0	NO
1505	F	35	60	1.6	23.4	0	NO
1506	M	45	75	1.68	26.6	0	NO
1507	M	72	64	1.55	26.6	0	NO
1508	F	35	60	1.56	24.7	0	NO
1509	F	27	65	1.7	22.5	0	NO
1510	F	35	107	1.87	30.1	0	NO
1511	F	46	72	1.6	28.1	0	NO
1512	F	51	70	1.6	27.3	2	NO

1513	M	27	86	1.7	29.8	0	NO
1514	M	32	70	1.63	26.3	0	NO
1515	F	40	68	1.75	22.2	0	NO
1516	F	45	62	1.6	24.2	0	NO
1517	M	63	75	1.64	27.9	1	NO
1518	F	19	60	1.7	20.8	0	NO
1519	F	34	84	1.6	32.8	0	NO
1520	F	46	65	1.6	25.4	0	NO
1521	F	30	77	1.57	31.2	0	NO
1522	F	27	68	1.65	25	0	NO
1523	M	34	71	1.72	24	0	NO
1524	F	48	60	1.65	20	0	NO
1525	F	30	53	1.58	21.2	2	NO
1526	F	22	75	1.66	27.2	0	NO
1527	F	40	92	1.7	31.8	0	NO
1528	F	28	80	1.74	26.4	0	NO
1529	F	45	75	1.57	30.4	0	NO
1530	F	23	68	1.6	26.6	0	NO
1531	F	19	64	1.65	23.5	0	NO
1532	F	25	66	1.7	22.8	0	NO
1533	F	29	80	1.75	26.1	0	NO
1534	F	20	65	1.6	25.3	0	NO
1535	F	40	61	1.6	23.8	0	NO
1536	M	28	63	1.57	25.6	1	NO
1537	F	35	74	1.7	25.6	0	NO
1538	F	27	60	1.6	23.4	0	NO
1539	F	32	70	1.64	26	0	NO
1540	F	44	68	1.5	30.2	1	NO
1541	F	33	75	1.69	26.3	0	NO
1542	F	36	68	1.65	25	1	NO
1543	F	28	59	1.53	25.2	0	NO
1544	F	35	80	1.74	26.4	0	NO
1545	F	38	65	1.65	23.9	0	NO
1546	F	45	70	1.67	25.1	0	NO
1547	M	30	61	1.75	19.9	0	NO
1548	F	19	65	1.55	27.1	0	NO
1549	F	23	63	1.6	24.6	0	NO
1550	F	33	68	1.66	24.7	0	NO
1551	F	40	70	1.6	27.3	0	NO
1552	F	23	90	1.67	32.3	0	NO
1553	F	30	72	1.65	26.4	0	NO

1554	F	24	74	1.73	24.7	0	NO
1555	F	28	66	1.59	26.1	0	NO
1556	M	24	75	1.7	26	0	NO
1557	F	35	62	1.65	22.8	0	NO
1558	F	50	80	1.7	27.7	1	NO
1559	F	27	65	1.64	24.2	0	NO
1560	F	20	69	1.54	29.1	0	NO
1561	F	36	120	1.73	40.1	0	NO
1562	F	28	88	1.75	28.7	0	NO
1563	F	28	63	1.57	25.6	0	NO
1564	F	22	60	1.69	21	0	NO
1565	F	40	68	1.64	25.3	0	NO
1566	F	25	65	1.65	23.9	0	NO
1567	F	29	78	1.7	27	0	NO
1568	F	29	82	1.76	26.5	0	NO
1569	F	28	65	1.55	27.1	0	NO
1570	F	37	117	1.7	40.5	0	NO
1571	M	30	82	1.75	26.8	0	NO
1572	F	35	65	1.68	23	0	NO
1573	F	47	112	1.65	41.1	1	NO
1574	F	22	68	1.6	26.6	0	NO
1575	F	19	55	1.6	21.5	0	NO
1576	F	40	120	1.57	48.7	1	NO
1577	F	30	90	1.85	26.3	0	NO
1578	F	21	78	1.65	28.7	0	NO
1579	F	25	60	1.6	23.4	0	NO
1580	F	30	67	1.62	25.5	0	NO
1581	F	22	71	1.57	28.8	0	NO
1582	F	27	68	1.7	23.5	0	NO
1583	F	35	70	1.62	26.7	0	NO
1584	F	23	65	1.58	26	0	NO
1585	F	30	70	1.63	26.3	0	NO
1586	F	35	79	1.64	29.4	1	NO
1587	F	31	70	1.67	25.1	0	NO
1588	F	22	80	1.75	26.1	0	NO
1589	F	30	65	1.68	23	0	NO
1590	F	34	67	1.7	23.2	0	NO
1591	F	45	115	1.83	34.3	2	NO
1592	M	38	80	1.69	28	0	NO
1593	F	40	83	1.63	31.2	0	NO
1594	F	25	60	1.61	23.1	0	NO

1595	F	26	81	1.73	27.1	0	NO
1596	M	25	70	1.7	24.2	1	NO
1597	F	30	68	1.65	25	0	NO
1598	F	28	66	1.67	23.7	0	NO
1599	F	32	63	1.65	23.14	0	NO
1600	F	20	67	1.61	25.9	0	NO
1601	F	37	64	1.6	25	0	NO
1602	F	40	70	1.63	26.3	0	NO
1603	F	22	83	1.6	32.4	0	NO
1604	F	50	75	1.53	22.4	0	NO
1605	F	20	65	1.68	23	0	NO
1606	F	35	68	1.7	23.5	0	NO
1607	F	32	65	1.63	24.1	0	NO
1608	M	40	70	1.7	24.2	0	NO
1609	M	29	63	1.55	26.2	0	NO
1610	F	22	65	1.67	23.3	0	NO
1611	F	40	105	1.75	34.3	0	NO
1612	F	22	58	1.53	24.8	0	NO
1613	F	29	64	1.61	24.7	0	NO
1614	F	30	68	1.7	23.5	0	NO
1615	F	40	70	1.62	26.7	0	NO
1616	F	20	62	1.6	24.2	0	NO
1617	F	27	80	1.85	23.4	0	NO
1618	F	40	72	1.53	30.8	2	NO
1619	F	19	62	1.65	22.8	0	NO
1620	M	27	83	1.73	27.7	0	NO
1621	F	30	90	1.8	27.8	0	NO
1622	F	35	67	1.68	23.7	0	NO
1623	F	80	72	1.7	24.9	0	NO
1624	F	22	65	1.61	25.1	0	NO
1625	F	30	105	1.83	31.4	0	NO
1626	F	19	70	1.65	25.7	0	NO
1627	F	25	88	1.68	31.2	0	NO
1628	F	28	63	1.52	27.3	0	NO
1629	F	40	103	1.6	40.2	1	NO
1630	F	30	70	1.69	24.5	0	NO
1631	F	36	72	1.63	27.1	0	NO
1632	M	25	68	1.75	22.2	0	NO
1633	F	40	62	1.63	23.3	0	NO
1634	F	30	60	1.58	24	0	NO
1635	M	68	75	1.7	26	0	NO

1636	F	40	71	1.69	24.9	0	NO
1637	F	28	58	1.53	24.8	0	NO
1638	F	39	110	1.83	32.8	0	NO
1639	M	35	72	1.65	26.4	0	NO
1640	M	31	59	1.57	23.9	0	NO
1641	F	21	70	1.7	24.2	0	NO
1642	F	40	64	1.69	22.4	0	NO
1643	F	20	60	1.52	26	0	NO
1644	F	70	62	1.6	24.2	0	NO
1645	F	35	70	1.69	24.5	0	NO
1646	F	40	55	1.52	23.8	0	NO
1647	F	28	65	1.7	22.5	0	NO
1648	F	37	71	1.6	27.7	1	NO
1649	M	80	63	1.62	24	0	NO
1650	F	22	60	1.53	25.6	0	NO
1651	F	25	68	1.63	25.6	0	NO
1652	F	70	64	1.7	22.1	0	NO
1653	M	65	70	1.68	24.8	2	YES
1654	F	30	65	1.61	25.1	0	NO
1655	F	19	70	1.65	25.7	0	NO
1656	F	62	60	1.52	26	0	NO
1657	F	54	70	1.69	24.5	0	NO
1658	F	24	58	1.58	25.8	0	NO
1659	F	40	70	1.6	27.3	0	NO
1660	F	38	65	1.67	23.3	0	NO
1661	F	25	60	1.7	20.8	0	NO
1662	F	52	63	1.65	23.1	0	NO
1663	M	60	72	1.66	26.1	0	NO
1664	F	42	61	1.59	24.1	0	NO
1665	F	53	68	1.8	21	0	NO
1666	F	45	70	1.64	26	0	NO
1667	F	75	60	1.62	22.9	1	NO
1668	F	20	80	1.67	28.7	0	NO
1669	F	19	60	1.6	23.4	0	NO
1670	F	22	65	1.63	24.5	0	NO
1671	F	42	70	1.67	25.1	0	NO
1672	F	48	75	1.7	26	0	NO
1673	M	50	65	1.6	25.4	0	NO
1674	F	40	66	1.7	22.8	0	NO
1675	F	19	54	1.53	23.1	0	NO
1676	M	20	60	1.62	22.9	0	NO

1677	F	28	68	1.58	27.2	0	NO
1678	F	25	62	1.61	23.9	0	NO
1679	F	32	66	1.63	24.8	0	NO
1680	F	50	69	1.68	24.4	0	NO
1681	F	35	70	1.6	27.3	0	NO
1682	F	40	63	1.58	25.2	0	NO
1683	M	28	70	1.61	27	0	NO
1684	M	44	66	1.7	23.8	0	NO
1685	F	50	55	1.53	23.5	0	NO
1686	F	46	80	1.65	29.3	0	NO
1687	F	60	65	1.62	24.8	0	NO
1688	F	50	110	1.73	36.8	1	NO
1689	F	70	69	1.57	28	0	NO
1690	F	62	58	1.64	21.6	0	NO
1691	M	55	60	1.55	25	0	NO
1692	F	19	65	1.7	22.5	0	NO
1693	F	28	56	1.62	21.3	0	NO
1694	M	80	70	1.68	24.8	0	NO
1695	F	22	68	1.57	27.6	0	NO
1696	F	24	70	1.63	26.3	0	NO
1697	M	50	117	1.77	37.3	1	NO
1698	F	60	70	1.65	25.7	0	NO
1699	M	23	66	1.69	23.1	0	NO
1700	F	30	68	1.72	23	0	NO
1701	F	46	63	1.62	24	0	NO
1702	F	33	59	1.56	24.2	0	NO
1703	F	55	72	1.69	25.2	0	NO
1704	F	62	68	1.72	23	0	NO
1705	F	66	70	1.7	24.2	0	NO
1706	F	60	68	1.7	23.5	0	NO
1707	F	41	80	1.62	30.5	0	NO
1708	F	19	58	1.72	19.6	0	NO
1709	F	55	86	1.65	31.6	0	NO
1710	F	35	60	1.58	24	0	NO
1711	F	61	117	1.83	34.9	1	YES
1712	F	23	62	1.6	24.2	0	NO
1713	F	37	65	1.7	22.5	0	NO
1714	F	21	57	1.55	23.2	0	NO
1715	M	30	66	1.71	22.6	0	NO
1716	M	45	72	1.69	25.2	0	NO
1717	F	22	67	1.6	26.2	0	NO

1718	F	31	62	1.65	22.8	0	NO
1719	M	28	70	1.7	24.2	0	NO
1720	F	35	65	1.64	24.2	0	NO
1721	F	82	63	1.59	24.9	2	NO
1722	F	47	70	1.68	24.8	0	NO
1723	F	20	74	1.71	25.3	0	NO
1724	F	60	67	1.6	26.2	0	NO
1725	F	31	63	1.62	24	0	NO
1726	F	51	58	1.5	25.8	0	NO
1727	F	50	67	1.64	24.9	0	NO
1728	F	38	75	1.64	27.9	0	NO
1729	F	44	68	1.63	25.6	0	NO
1730	F	25	80	1.68	28.3	0	NO
1731	F	62	71	1.65	26.1	0	NO
1732	M	50	65	1.64	24.2	0	NO
1733	M	89	75	1.62	28.6	1	NO
1734	F	28	60	1.64	22.3	0	NO
1735	F	34	58	1.5	25.8	0	NO
1736	M	52	100	1.63	37.6	0	NO
1737	F	19	58	1.58	23.2	0	NO
1738	M	54	62	1.6	24.2	0	NO
1739	F	27	68	1.53	29	0	NO
1740	F	36	71	1.6	27.7	0	NO
1741	F	55	62	1.59	24.5	0	NO
1742	F	44	70	1.67	25.1	0	NO
1743	F	30	65	1.55	27.1	0	NO
1744	F	49	66	1.58	26.4	0	NO
1745	F	33	80	1.65	29.4	0	NO
1746	F	60	63	1.66	22.9	0	NO
1747	F	20	58	1.53	24.8	0	NO
1748	F	70	68	1.71	23.3	0	NO
1749	F	25	72	1.57	29.2	0	NO
1750	F	44	60	1.62	22.9	0	NO
1751	F	21	63	1.56	25.9	0	NO
1752	F	25	55	1.75	18	0	NO
1753	F	40	70	1.62	26.7	0	NO
1754	M	50	106	1.69	37.1	2	NO
1755	F	34	63	1.7	21.8	0	NO
1756	F	19	61	1.55	25.4	0	NO
1757	F	60	72	1.65	26.4	0	NO
1758	F	20	80	1.6	31.3	0	NO

1759	M	33	55	1.57	22.3	0	NO
1760	F	50	120	1.8	37	0	NO
1761	F	31	60	1.6	23.4	0	NO
1762	F	60	65	1.65	23.9	0	NO
1763	F	20	78	1.73	26.1	0	NO
1764	F	35	80	1.7	27.7	0	NO
1765	F	21	60	1.55	25	0	NO
1766	F	18	61	1.53	26.1	0	NO
1767	F	50	100	1.8	30.9	0	NO
1768	F	46	82	1.6	32	0	NO
1769	F	19	58	1.53	24.8	0	NO
1770	F	58	71	1.6	27.7	0	NO
1771	F	60	65	1.62	24.8	1	NO
1772	F	35	57	1.65	20.9	0	NO
1773	F	21	60	1.57	24.3	0	NO
1774	F	30	78	1.6	30.5	0	NO
1775	M	81	65	1.57	26.4	1	YES
1776	F	18	58	1.53	24.8	0	NO
1777	F	29	69	1.56	28.4	0	NO
1778	F	35	81	1.6	31.6	0	NO
1779	F	37	56	1.53	23.9	0	NO
1780	F	32	73	1.67	26.2	0	NO
1781	M	38	80	1.7	27.7	0	NO
1782	F	20	67	1.5	29.8	0	NO
1783	F	34	85	1.81	25.9	0	NO
1784	F	52	73	1.65	26.8	0	NO
1785	F	24	60	1.58	24	0	NO
1786	F	38	79	1.62	30.1	0	NO
1787	F	55	90	1.83	26.9	0	NO
1788	F	19	60	1.5	26.7	0	NO
1789	F	70	64	1.64	23.8	0	NO
1790	F	30	72	1.53	30.8	0	NO
1791	F	45	69	1.7	23.9	0	NO
1792	F	30	65	1.65	23.9	0	NO
1793	F	40	70	1.71	24	0	NO
1794	M	58	109	1.61	40.1	2	NO
1795	F	26	58	1.68	20.5	0	NO
1796	F	32	66	1.59	26.1	0	NO
1797	F	26	79	1.65	29	0	NO
1798	F	24	63	1.55	24.9	0	NO
1799	F	30	84	1.68	29.8	0	NO

1800	F	65	66	1.57	26.8	0	NO
1801	M	62	66	1.65	24.2	0	NO
1802	F	18	60	1.54	25.3	0	NO
1803	F	38	70	1.81	21.4	0	NO
1804	F	55	85	1.69	29.8	0	NO
1805	F	20	62	1.55	25.8	0	NO
1806	F	41	59	1.53	25.2	0	NO
1807	F	48	63	1.61	24.3	0	NO
1808	F	19	60	1.65	22	0	NO
1809	F	35	80	1.7	27.7	0	NO
1810	F	39	65	1.63	24.5	2	NO
1811	F	68	116	1.83	34.6	0	NO
1812	F	32	70	1.64	26	0	NO
1813	M	44	62	1.56	25.5	0	NO
1814	F	50	73	1.6	28.5	0	NO
1815	F	21	68	1.82	20.5	0	NO
1816	F	30	66	1.58	26.4	0	NO
1817	F	46	72	1.6	23.4	0	NO
1818	F	20	68	1.65	24	0	NO
1819	F	38	100	1.87	28.6	0	NO
1820	F	25	59	1.58	23.6	0	NO
1821	F	51	67	1.61	25.9	0	NO
1822	F	30	73	1.65	26.8	0	NO
1823	M	65	98	1.75	32	0	NO
1824	F	68	82	1.57	33.3	1	NO
1825	F	25	67	1.6	26.2	0	NO
1826	F	33	60	1.58	24	0	NO
1827	F	40	80	1.7	27.7	0	NO
1828	F	60	62	1.5	27.6	0	NO
1829	F	52	74	1.65	27.2	0	NO
1830	F	24	57	1.53	24.3	0	NO
1831	F	35	68	1.63	25.6	0	NO
1832	M	50	110	1.85	32.1	0	NO
1833	F	28	80	1.67	28.7	0	NO
1834	F	36	68	1.6	26.6	0	NO
1835	F	30	60	1.62	22.9	0	NO
1836	F	62	84	1.72	28.4	0	NO
1837	F	45	65	1.6	25.4	0	NO
1838	F	70	68	1.65	25	1	NO
1839	M	60	57	1.53	24.3	0	NO
1840	F	39	63	1.6	24	0	NO

1841	M	42	70	1.65	25.7	0	NO
1842	F	45	84	1.66	30.1	0	NO
1843	F	28	65	1.6	25.4	0	NO
1844	F	34	60	1.67	21.5	0	NO
1845	F	18	59	1.54	24.9	0	NO
1846	F	25	62	1.6	24.2	0	NO
1847	F	34	65	1.66	23.6	0	NO
1848	F	51	68	1.7	23.5	0	NO
1849	F	30	70	1.6	27.3	0	NO
1850	F	28	60	1.55	25	0	NO
1851	F	38	64	1.6	25	0	NO
1852	F	40	70	1.68	24.8	0	NO
1853	F	20	66	1.6	25.8	0	NO
1854	F	25	90	1.65	33.1	0	NO
1855	F	35	60	1.7	20.8	0	NO
1856	F	60	69	1.58	27.6	0	NO
1857	M	18	55	1.53	23.5	0	NO
1858	F	35	62	1.67	22.2	0	NO
1859	F	64	76	1.65	27.9	0	NO
1860	F	70	82	1.74	27.1	0	NO
1861	M	60	90	1.72	30.4	2	NO
1862	F	28	60	1.58	24	0	NO
1863	F	44	67	1.6	26.2	0	NO
1864	F	21	60	1.63	22.6	0	NO
1865	F	35	65	1.72	22	0	NO
1866	F	40	68	1.7	23.5	0	NO
1867	F	52	76	1.65	27.9	0	NO
1868	F	35	60	1.79	18.7	0	NO
1869	F	20	63	1.5	28	0	NO
1870	F	65	70	1.66	25.4	0	NO
1871	F	36	70	1.64	26	0	NO
1872	F	24	65	1.6	25.4	0	NO
1873	F	18	60	1.57	24.3	0	NO
1874	F	64	68	1.72	23	0	NO
1875	M	40	102	1.66	37	1	NO
1876	F	28	55	1.53	23.5	0	NO
1877	M	55	65	1.6	25.4	0	NO
1878	F	26	62	1.57	25.2	0	NO
1879	F	35	59	1.52	25.5	0	NO
1880	F	46	63	1.62	24	0	NO
1881	F	61	75	1.68	26.6	0	NO

1882	F	22	60	1.64	22.3	0	NO
1883	F	35	68	1.8	21	0	NO
1884	F	18	60	1.5	26.6	0	NO
1885	F	31	65	1.6	25.4	0	NO
1886	F	49	68	1.64	25.3	0	NO
1887	M	80	60	1.7	20.7	1	NO
1888	F	41	120	1.75	39.2	0	NO
1889	F	20	55	1.53	23.5	0	NO
1890	F	25	61	1.6	23.8	0	NO
1891	F	56	80	1.62	30.5	0	NO
1892	F	41	65	1.6	25.4	0	NO
1893	F	35	90	1.75	29.4	0	NO
1894	F	66	82	1.74	27.1	3	NO
1895	F	37	64	1.6	25	0	NO
1896	M	60	73	1.65	26.8	0	NO
1897	F	48	69	1.7	23.9	0	NO
1898	F	18	60	1.55	25	0	NO
1899	F	35	64	1.67	22.9	0	NO
1900	M	40	100	1.8	30.9	0	NO
1901	F	32	69	1.65	25.3	0	NO
1902	F	18	60	1.53	25.6	0	NO
1903	M	25	65	1.7	22.5	0	NO
1904	M	33	70	1.8	21.6	0	NO
1905	F	30	61	1.6	23.8	0	NO
1906	F	25	80	1.65	29.4	0	NO
1907	F	72	100	1.72	33.8	1	YES
1908	M	20	55	1.64	20.4	0	NO
1909	F	49	82	1.75	26.8	0	NO
1910	F	60	68	1.63	25.6	0	NO
1911	F	38	77	1.66	27.9	0	NO
1912	F	51	65	1.7	22.5	0	NO
1913	F	18	52	1.53	22.2	0	NO
1914	F	25	70	1.74	23.1	0	
1915	M	37	62	1.6	24.2	0	NO
1916	F	32	69	1.71	23.6	0	NO
1917	F	40	71	1.63	26.7	0	NO
1918	F	55	64	1.57	26	0	NO
1919	F	48	70	1.64	26	0	NO
1920	F	22	60	1.6	23.4	0	NO
1921	M	68	72	1.63	27.1	0	NO
1922	F	28	67	1.65	24.6	0	NO

1923	F	40	70	1.68	24.8	0	NO
1924	F	52	90	1.6	35.2	0	NO
1925	F	75	66	1.6	25.8	2	NO
1926	F	19	55	1.53	23.5	0	NO
1927	F	25	74	1.63	27.9	0	NO
1928	F	58	120	1.71	41	0	NO
1929	F	32	71	1.58	28.4	0	NO
1930	F	26	65	1.6	25.4	0	NO
1931	F	49	70	1.73	23.4	3	NO
1932	F	20	60	1.65	22	0	NO
1933	F	50	84	1.7	29.1	0	NO
1934	F	29	68	1.62	25.9	0	NO
1935	F	35	81	1.74	26.8	0	NO
1936	F	28	63	1.62	24	0	NO
1937	M	54	70	1.71	23.9	0	NO
1938	F	33	66	1.68	23.4	0	NO
1939	F	18	53	1.48	24.2	0	NO
1940	F	45	79	1.59	31.2	0	NO
1941	M	32	70	1.64	26	0	NO
1942	M	56	68	1.65	25	0	NO
1943	F	21	60	1.53	25.6	0	NO
1944	F	30	66	1.62	25.1	0	NO
1945	M	60	72	1.65	26.4	0	NO
1946	F	22	60	1.68	21.3	1	NO
1947	F	35	90	1.57	36.5	0	NO
1948	F	52	84	1.83	25.1	0	NO
1949	F	26	71	1.6	27.7	0	NO
1950	F	33	64	1.57	26	0	NO
1952	M	65	69	1.65	25.3	0	NO
1953	F	32	94	1.7	32.5	0	NO
1953	F	21	60	1.53	25.6	0	NO
1954	F	43	105	1.8	32.4	0	NO
1955	F	19	57	1.6	22.2	0	NO
1956	M	66	73	1.75	23.8	0	NO
1957	F	25	60	1.64	22.3	0	NO
1958	F	27	66	1.7	22.8	0	NO
1959	F	24	60	1.65	22	0	NO
1960	M	65	100	1.65	36.7	2	NO
1961	F	26	70	1.6	27.3	0	NO
1962	M	18	55	1.64	20.4	0	NO
1963	F	50	69	1.72	23.3	0	NO

1964	M	70	72	1.66	26.1	0	NO
1965	F	32	65	1.57	26.4	0	NO
1966	F	28	70	1.63	26.3	0	NO
1967	F	44	85	1.71	29.1	0	NO
1968	F	18	60	1.6	23.4	0	NO
1969	F	52	65	1.57	26.4	0	NO
1970	M	35	80	1.78	25.2	0	NO
1971	F	23	66	1.65	24.2	0	NO
1972	F	60	74	1.61	28.5	0	NO
1973	F	25	65	1.58	26	0	NO
1974	F	40	72	1.66	26.1	1	NO
1975	F	20	60	1.65	22	0	NO
1976	F	30	67	1.64	24.9	0	NO
1977	F	52	80	1.73	26.7	0	NO
1978	F	33	65	1.7	22.5	0	NO
1979	F	66	60	1.53	25.6	2	NO
1980	F	24	70	1.72	23.7	0	NO
1981	F	28	63	1.56	25.9	0	NO
1982	M	35	68	1.7	23.5	0	NO
1983	M	60	81	1.6	31.6	0	NO
1984	F	18	60	1.62	22.9	0	NO
1985	F	55	62	1.57	25.2	0	NO
1986	F	41	60	1.82	18.1	0	NO
1987	F	22	65	1.66	23.6	0	NO
1988	F	70	62	1.55	25.8	1	YES
1989	F	20	60	1.6	23.4	0	NO
1990	F	28	75	1.73	25.1	0	NO
1991	M	32	68	1.8	21	0	NO
1992	F	40	60	1.53	25.6	0	NO
1993	F	25	65	1.69	22.8	0	NO
1994	M	18	58	1.57	23.5	0	NO
1995	F	53	96	1.77	30.6	0	NO
1996	F	58	115	1.7	39.8	1	NO
1997	F	29	67	1.58	26.8	0	NO
1998	M	30	70	1.73	23.4	0	NO
1999	F	21	63	1.57	25.6	0	NO
2000	F	39	71	1.6	27.7	0	NO