

1) In a survey of 200 high school seniors, 60 said that Geometry was their favorite math class. Forty percent of the remaining students reported that Algebra 2 was their favorite math class. How many students surveyed said that their favorite math class was Algebra 2?

- A) 24
- B) 30
- C) 56
- D) 80

2) While driving cross-country, Gertrudis decides to decrease her miles driven by a constant rate each day. On day 3 she drove 408 miles and on day 8 she drove 373 miles. Which of the following describes the change in Gertrudis' driving miles per day?

- A) Gertrudis decreased her miles driven by 5 miles per day
- B) Gertrudis decreased her miles driven by 7 miles per day
- C) Gertrudis decreased her miles driven by 15 miles per day
- D) Gertrudis decreased her miles driven by 35 miles per day

3) Shibobian is decorating for the school carnival. She takes a ribbon that is 20 yards long and cuts it into fourths, and then cuts each fourth in half. How long, in feet, is each piece of new ribbon? One yard = 3 feet.

- A) 6 feet
- B)  $6\frac{1}{2}$  feet
- C) 7 feet
- D)  $7\frac{1}{2}$  feet

4) The Body Mass Index (BMI) of an individual is found by taking his/her weight in kilograms and dividing by the square of his/her height in meters. Find the approximate height of an individual with BMI of 28 and a weight of 140 kilograms

- A) 1.5 meters
- B) 1.9 meters
- C) 2.2 meters
- D) 5 meters

5)                    1 acre = 4840 square yards  
                          1 square mile = 640 acres

Nuni purchased some land. If the area of the land is  $\frac{1}{2}$  square mile, then approximately how many square yards is the property?

- A) 38,000
- B) 774,000
- C) 1,550,000
- D) 6,200,000

6) Bloomfield Avenue is a long, busy street. On the slowest days, a driver can drive 11 miles per hour; on the fastest days a driver can drive 16 miles per hour. Based upon this information, what is a possible number of miles a driver can drive after 5 hours?

7) A store is open 24 hours a day, 7 days a week. The manager wishes there to be three people working in the store at all times; each shift lasts 5 hours. Approximately many total shifts are there in a week?

- A) 60
- B) 80
- C) 100
- D) 120

8) A test is worth a total of 60 points. Each question is worth either 3 points or 8 points. If there were at least 2 of each type of question, then what is one possible number of 3-point questions?

9) At a traffic stop, 4 cars are pulled over for every 50 cars that pass to see if the inspection is up to date. At this rate, how many cars would be pulled over if 7000 cars pass by the traffic stop?

- A) 520
- B) 560
- C) 600
- D) 640

Questions 10 and 11 refer to the following information

The amount of money a ferry boat operator takes in is directly proportional to the number of cars on the boat. The operator earns \$480 for 12 cars on her boat.

10) How much money will she have if 30 cars are on her boat?

- A) \$1200
- B) \$1280
- C) \$1440
- D) \$1680

11) The operator of the ferry donates 12% of her money to charity and keeps the rest. If 10 cars are on the boat, how much money does she keep?

- A) \$48
- B) \$62
- C) \$338
- D) \$352

12) A new brand of yogurt claims to have 40% less calories than traditional yogurt. If traditional yogurt has 160 calories per serving, which of the following best approximates the number of calories of the new brand per serving?

- A) 40
- B) 65
- C) 95
- D) 120

13) Gertrudis is  $n$  feet and 3 inches tall, which is 39 inches. What is the value of  $n$ ?

14) A writer for a newspaper receives  $m$  cents for every word he writes. If he writes  $w$  words for each article, and writes  $a$  articles each year, then the money he receives in dollars in a year can be found using the expression  $100mwa$ . If the writer were to write longer articles, which of the factors in the expression would change?

- A) 100
- B)  $m$
- C)  $w$
- D)  $a$

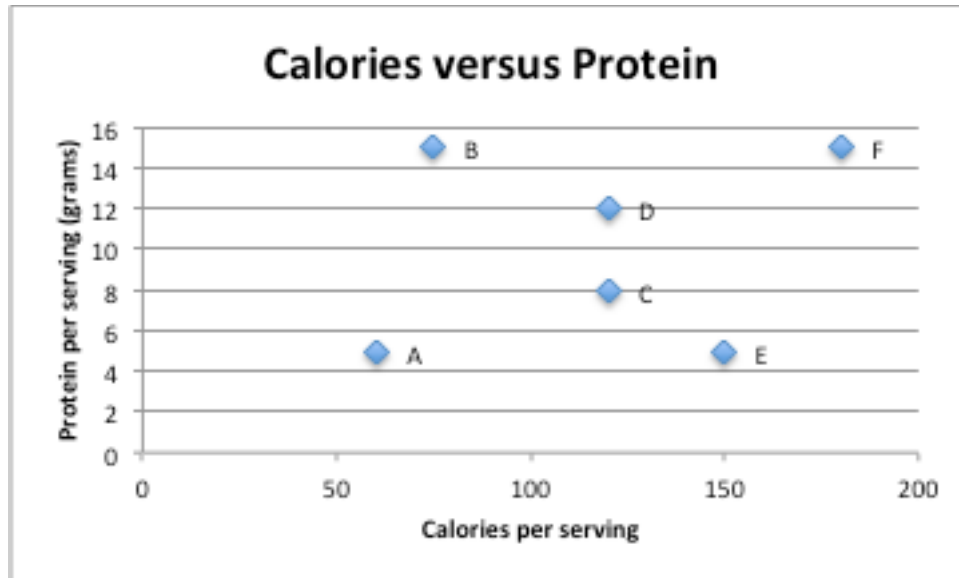
15) A sound wave can travel 100 miles in approximately 21.3 seconds. Assuming this rate continues, approximately how far could the sound wave travel in 3 minutes?

- A) 290 miles
- B) 435 miles
- C) 710 miles
- D) 845 miles

16) Nuni surveyed a random sample of the seniors in his high school to determine whether the kids plan to go to college after graduation or to do something else. Of the 40 students he surveyed, 67.5% planned to go to college. Based on this information, about how many students in the entire 350-person class would be expected to plan to go to college?

- A) 165
- B) 205
- C) 215
- D) 235

Questions 17 and 18 refer to the following information



Shibobian created the scatterplot above to examine the calories and protein per serving of 6 different foods

17) What is the protein content, in grams, of the food with the lowest amount of calories per serving?

- A) 5
- B) 8
- C) 15
- D) 60

18) Shibobian is most interested in eating the food with the lowest ratio of calories to protein per serving  
Which food should she eat the most of?

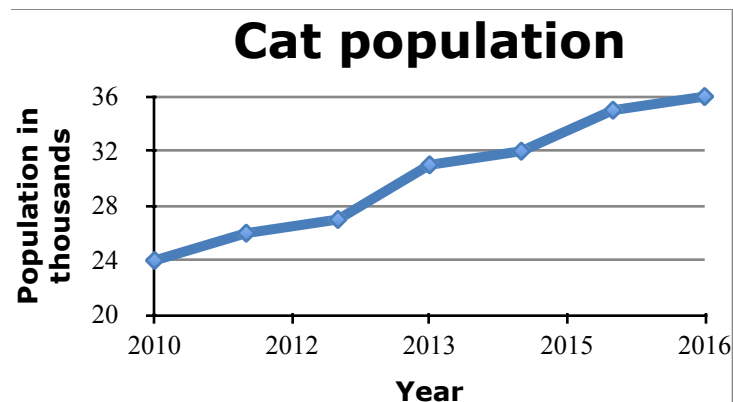
- A) A
- B) B
- C) E
- D) F

19) A particular liquid, when dropped into water, can spread out so thin that just 4 ounces of the liquid in water can spread out to an area of  $2\frac{5}{6}$  acres. How many pounds of the liquid were initially dropped in water if the liquid spread out to 20 acres? (1 pound = 16 ounces)

- A)  $1\frac{13}{30}$
- B)  $1\frac{13}{17}$
- C)  $2\frac{6}{13}$
- D)  $2\frac{6}{30}$

20) In a small town, there are three types of voters: Republican Democrat, and Independent. The ratio of types of voters is 3:4:2, respectively. What is the probability that a person chosen at random is not a Republican?

- A)  $33\frac{1}{3}\%$
- B) 50%
- C)  $66\frac{2}{3}\%$
- D) 70%



21) According to the line graph above, the number of cats in 2011 is what fraction of the number of cats in 2014?

- A)  $\frac{3}{16}$
- B)  $\frac{1}{2}$
- C)  $\frac{5}{8}$
- D)  $\frac{13}{16}$

22) Planet SR-388 makes one orbit around its sun in approximately 3 Earth years. The distance the planet travels in one orbit is about 23,000,000 miles. Of the following, which is closest to the average speed of Planet SR-388, in miles per hour, as it orbits its sun?

- A) 880
- B) 1,300
- C) 1,900
- D) 2,630

23) Ryan is creating a final exam which consists of 150 multiple choice questions. If he can create 4 questions in 11 minutes, how many hours will it take him to create the final exam?

- A)  $4\frac{7}{8}$  hours
- B)  $5\frac{5}{8}$  hours
- C)  $6\frac{3}{8}$  hours
- D)  $6\frac{7}{8}$  hours

ANSWER KEY:

1. C
2. B
3. D
4. C
5. C
6.  $55 < x < 80$
7. C
8. 4 or 12
9. B
10. A
11. D
12. C
13. 3
14. C
15. D
16. D
17. A
18. B
19. B
20. C
21. D
22. A
23. D