

1. Robert is writing a paper for science class. He can write $\frac{1}{3}$ of a page in $\frac{1}{2}$ of an hour. At what rate is Robert writing?

- a. $\frac{1}{6}$ page per hour b. $\frac{5}{6}$ page per hour c. 6 pages per hour d. $\frac{2}{3}$ page per hour

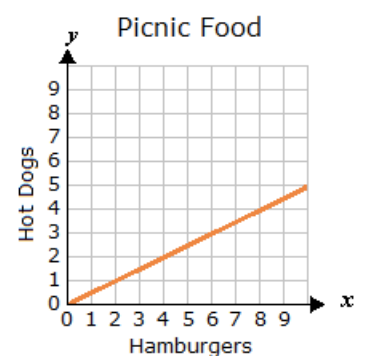
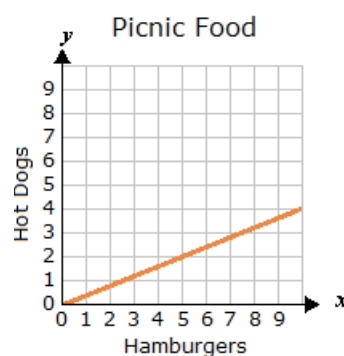
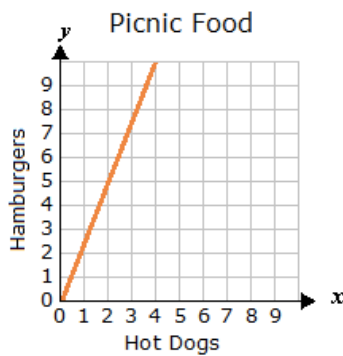
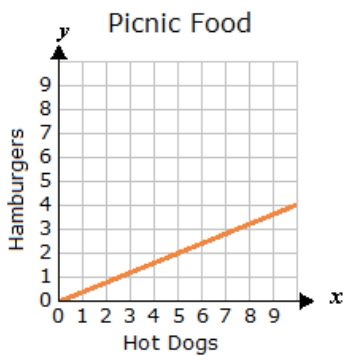
2. The ratio of hamburgers to hotdogs sold at a picnic is $\frac{2}{5}$. Which graph could represent this ratio?

A.

B.

C.

D.



3.) Which of the following tables represents a proportional relationship?

A.

x	8	9	10	11
y	24	48	72	96

C.

x	32	33	34	35
y	96	72	48	24

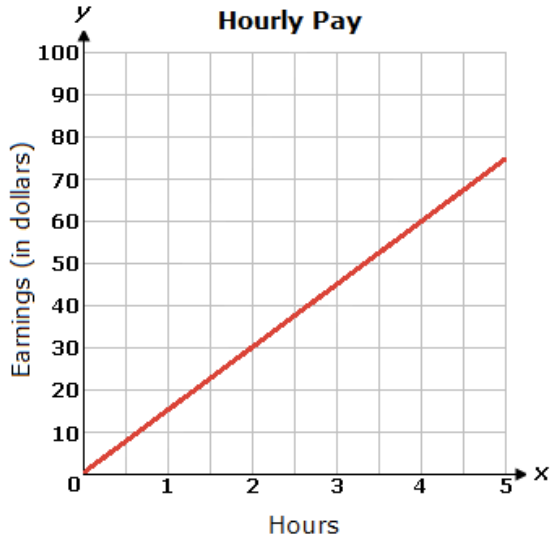
B.

x	8	16	24	32
y	24	48	72	96

D.

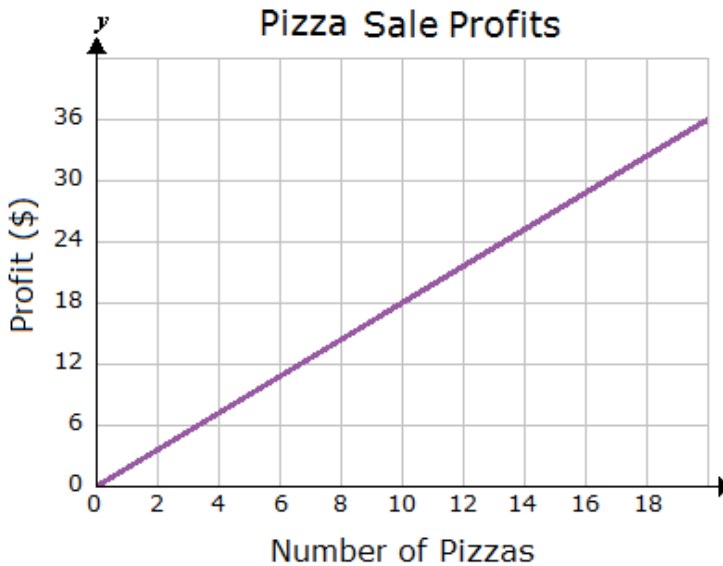
x	32	36	40	44
y	96	112	128	144

4.) The graph below shows the hourly pay for employees at a hamburger stand. Based on the graph, what does the point (3,45) represent?



- a. An employee earns \$3 in 45 hours.
- b. An employee earns \$45 in 3 days.
- c. An employee earns \$3 in 45 days.
- d. An employee earns \$45 in 3 hours.

5.) The 7th grade choir sold pizzas for a fundraiser. The choir teacher created the graph below for the students.



Based on the graph, what is the unit profit for the pizzas?

- A. \$8.00 per pizza
- B. \$0.56 per pizza
- C. 18 pizzas for \$10
- D. \$1.80 per pizza

6.) The value of a professional basketball player's autograph rose 40% in the last year. It is now worth \$294.00. What was it worth a year ago?

- a. \$200
- b. \$210
- c. \$230
- d. \$220

7.) Last month, when Joe took his puppy to the veterinarian, the puppy weighed 4.1 pounds. This month, the puppy weighed 6.15 pounds. What is the percentage increase of the weight of the puppy?

- a. 33% b. 2% c. 50% d. 67%

8.) A company policy requires that, for every 30 employees, there must be 3 supervisors. If there are 267 supervisors at the company, how many employees does the company have?

- a. 2,403 B. 1,335 c. 2,670 d. 3,204

9.) The ratio of boys to girls in the class is 4:5. If there is a total of 27 students, how many more girls than boys are in the class?

- a. 3 more girls b. 15 more girls c. 1 more girls d. 4 more girls

10.) Find the value of $-\frac{2}{5} - (-\frac{1}{8})$

- a. $-\frac{21}{40}$ b. $-\frac{11}{40}$ c. $\frac{11}{40}$ d. $\frac{3}{13}$

11.) Which expression below is equivalent to $\frac{3}{5}(20x - 80y) - (15x + 18y)$?

- a. $-3x - 66y$ b. $3x - 30y$ c. $-27x - 98y$ d. $35x - 68y$

12.) A go-cart has a maximum weight limit of 240 pounds. Which inequality correctly represents this weight limit, w ?

- a. $w > 240$ lbs b. $w < 240$ lbs c. $w \geq 240$ lbs d. $w \leq 240$ lbs

13.) Which is the solution to the following inequality? $2x - 7 \geq 9$

- a. $x \geq 8$ b. $x \geq 1$ c. $x \leq 8$ d. $x \geq -1$

14.) A restaurant wants to know if its customers like its new menu. It surveys 100 randomly selected customers over one week. What is the population in this study?

- a. The 100 randomly surveyed customers
b. All customers that eat at the restaurant
c. All residents of the town
d. Everyone who walks by the restaurant

15.) Factor the expression using the greatest common factor:

$12b - 54c + 42$

- a. $2(24b - 108c + 84)$ b. $6(2b - 9c + 7)$
c. $12(b + 54c + 42)$ d. $6(6b - 48c + 36)$

16.) Find the value of a : $-\frac{1}{9}(27a - 81) = 24$

- a. $a = 8$ b. $a = -3$ c. $a = -5$ d. $a = -7$

17. The temperature in Minot North Dakota was -6° at midnight. By morning the temperature had decreased by 11° . What was the temperature in the morning?

- a. -5° b. 5° c. 17° d. -17°

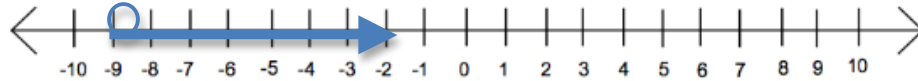
18.) Which graph below represents all possible solutions for k?

$$-\frac{2}{3}k - 8 > -2$$

a.



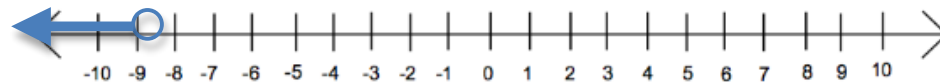
b.



c.



d.



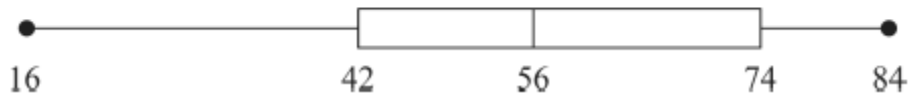
19.) There are 1,000 marbles in a large box. Johnny took a scoop of marbles from the box. He counted 15 red marbles, 20 green marbles, and 5 blue marbles. If the scoop was a good sample of the marbles in the box, how many red marbles would you expect to find in the box?

- a. 150 red marbles b. 375 red marbles c. 600 red marbles d. 800 red marbles

20.) In order to determine the number of hours of homework that a grade 10 student at Cedar Valley School does each week Elaine selects a random sample of 25 grade 10 students at the school and asks them to fill out a survey. Identify the sample.

- a. The 25 students selected
b. The students in grade 10 at Cedar Valley School
c. All students at Cedar Valley School
d. All the grade 10 students in the district

21.) The box-and-whisker plot shown below represents 60 scores on a district geometry test.



How many students scored between 42 and 56?

- a. 8 b. 15 c. 30 d. 45

Will wanted to know how many hours the average 7th grader sleeps at night. He surveyed 5 students, and recorded the amount of sleep they get in hours in the table below. Use the information in the table to answer questions 22-24

Student one	Student two	Student three	Student four	Student five
8 hours	10.25 hours	6.5 hours	5.75 hours	9.5 hours

22.) Which of the following best describe Will's survey data?

- a. mean: 40hours median: 8 hours range: 1.5 hours
b. mean: 8 hours median: 6.5 hours range: 4.5 hours
c. mean: 8 hours median: 8 hours range: 4.5 hours
d. mean: 7.5 hours median: 6.5 hours range 14.5 hours

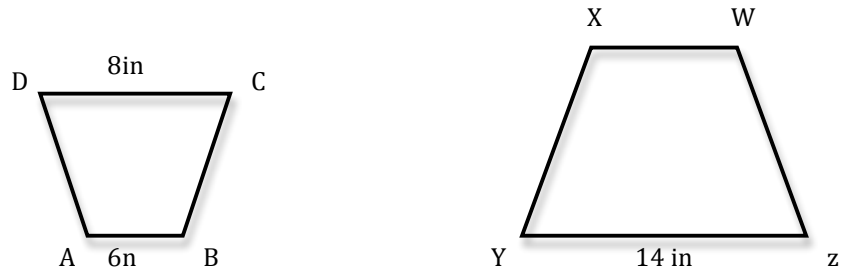
23.) What is the Mean Absolute Deviation of the data Will collected?

- a. 1.5 hours b. 0.75 hours c. 2.5 hours d. 1.75 hours

24.) Will wants to know how well the data in his survey represents the 7th graders in his school. Which option below would give Will a sample that is random and unbiased?

- a. Selecting the first five seventh grade students that arrive at school in the morning
b. Asking every seventh grade student that rides his bus
c. Selecting every 20th seventh grade student in the school's directory of all students
d. Selecting seventh grade students at random in his band class

25.) Trapezoid ABCD \approx Trapezoid WXYZ. Find the measure of side WX.

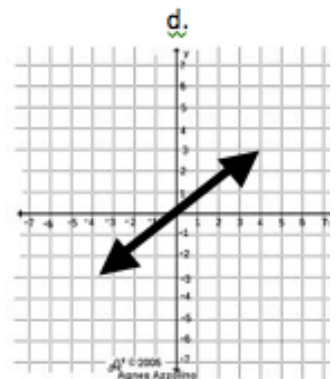
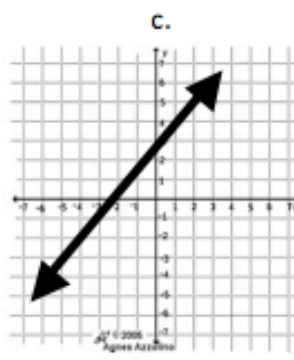
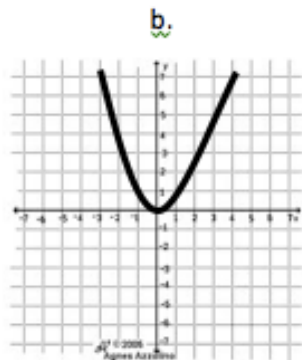
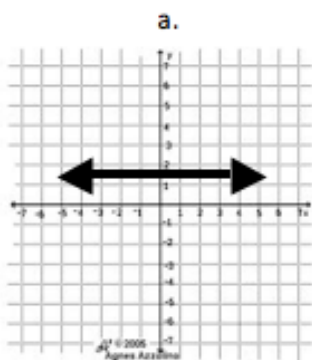


- a. 10.5 in b. 12 in c. 9 in. d. 15.5 in.

26.) 75% of the students in the class came to tutorial at least once. If 27 students in the class went to tutorial, how many total students are in the class?

- a. 20 students b. 36 students c. 30 students d. 32 students

27.) Which graph below represents a proportional relationship?

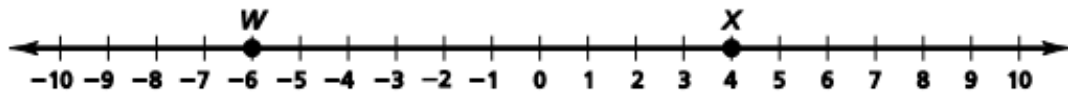


28.) Mark and his friends all have jobs, but are paid at different rates. Who earns the most money per hour?

- A. Dave, who earns \$51 every 4 hours.
- B. Carl, who earns \$512 per week (40 hours)
- C. Bob, who earns \$100 per 8 hour shift.
- D. Mark, who earns \$12.75 per hour.

29.)

Two points are plotted on the number line below.



Which of the following has the **greatest** value?

- | | | | |
|----|---------|----|-------------|
| A. | $W - X$ | C. | $W + X$ |
| B. | $X - W$ | D. | $X \cdot W$ |

30.) Find the value of y : $\frac{y}{5} + (-8) = -5$

- a. $y = 5$ b. $y = 10$ c. $y = 15$ d. $y = 20$

Answers:

1. D
2. A
3. B
4. D
5. D
6. B
7. C
8. C
9. A
10. B
11. A
12. D
13. A
14. B
15. B
16. C
17. D
18. D
19. B
20. A
21. B
22. C
23. A
24. C
25. A
26. B
27. D
28. B
29. B
30. C