Name:_____   Date:_____

1.

Store
X

↑
N

X
Sue's House
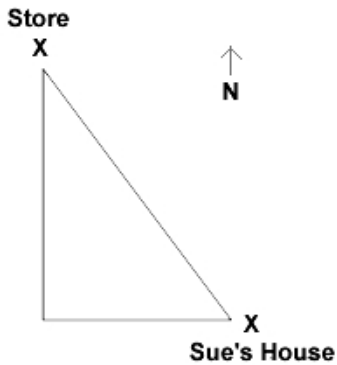
Sue left her house traveling due west towards the store. After 50 yards she traveled due north 120 yards to the store. When she left the store she cut across the field and traveled along a straight path. How much shorter was the path Sue took home then the path she took to the store?

A. 40 yards
B. 61 yards
C. 70 yards
D. 109 yards

2. **These are the sides of a number cube used in a game.**

Sam will win the game he is playing if he gets a number less than 3 the next time he rolls the number cube. What is the probability that Sam will win the game on his next roll?

A. $\frac{1}{6}$

B. $\frac{1}{3}$

C. $\frac{1}{2}$

D. $\frac{2}{3}$

3.

Hours since 12 am	Number of times she heard a car horn
2	6
3	8
4	10
5	12
6	14
7	16
9	20
10	22
12	?
13	28
15	30

Jenny wanted to know if people were more likely to beep their horns at a certain time during the day. One night she recorded the number of times she heard a car horn during one hour intervals. What should be the value of the missing *y*-coordinate so that the data can be modeled with a linear function?

A. 24
B. 25
C. 26
D. 27

4. Karen makes $5 per hour baby-sitting and $12 per hour giving music lessons. One weekend, she worked a total of 18 hours and made $139. How many hours did she spend baby-sitting?

A. 11

B. 9

C. 7

D. 6

5.

Michael runs 3.5 miles in 30 minutes. If he continues at this rate for 2 hours, determine his rate of change.

A. 3.5 miles/hour
B. 7 miles/hour
C. 14 miles/hour
D. 10 miles/hour

6.

At a concession stand, a hamburger is 25 cents more than twice the cost of a hotdog. If h represents the cost of a hamburger and d represents the cost of a hotdog, which expression represents the cost of the hamburger in relation to the cost of the hotdog?

A. $d + 0.25$
B. $2d$
C. $2d - 0.25$
D. $2d + 0.25$

7.

A jet ski rental company charges a $50 deposit and $30 for each hour on the jet ski. Mark has $140 dollars. Write an inequality that represents the maximum number of hours that Mark can ride the jet ski.

A. $80h \geq 140$
B. $30h \geq 190$
C. $50 + 30h \leq 140$
D. $50 + 30h < 90$

8.

Shirt	Shorts	Shoes
White	Red	Sneakers
	Blue	Sandals

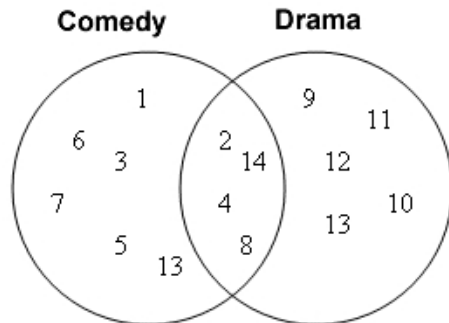**Which diagram shows all the possible combinations of 1 shirt, 1 pair of shorts, and 1 kind of shoes?**

A. White ——— Red ——— Blue

B.
White
Red ——— Sneakers
Blue ——— Sandals

C.
White
Red — Sneakers / Sandals
Blue — Sneakers / Sandals

D.
White
Red ——— Sneakers
Red ——— Sandals

9.

Sean has a spinner and a bag of marbles. The spinner is evenly divided into 8 sections. The bag is filled with 6 different colored marbles. Sean will spin the spinner and randomly select a marble. How many possible outcomes does Sean have?
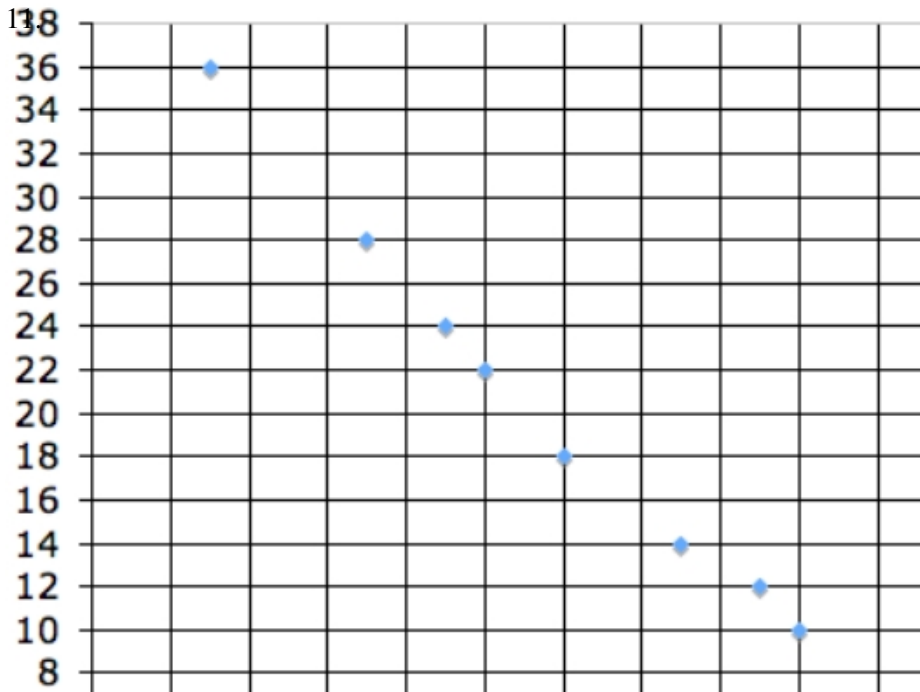
A. 14
B. 28
C. 36
D. 48

10.

Students were asked for their favorite type of television show, comedy, drama, or both. Each student was given a number and placed in the Venn Diagram. Which group of students is the complement of Comedy ?

A. 1, 3, 5, 6, 7, 13
B. 1, 2, 3, 4, 5, 6, 7, 8, 13, 14
C. 2, 4, 8, 9, 10, 11, 12, 13, 14
D. 9, 10, 11, 12, 13

Which linear function best approximates the data?

A. $y = 0.67x + 38$
B. $y = -0.67x + 38$
C. $y = 1.52x + 38$
D. $y = -1.52x + 38$

12.

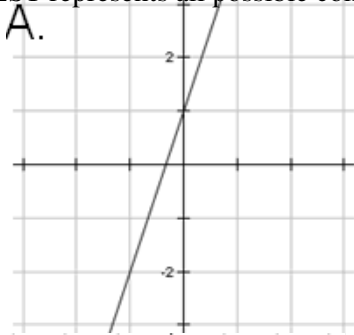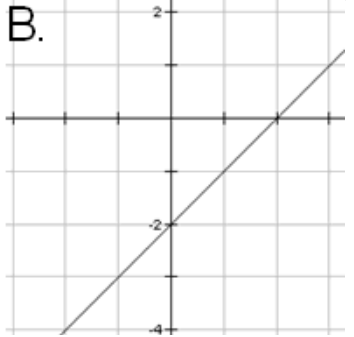What are the x and y values in this system of equations?

$2x + 4y = 8$
$2y = x + 8$

A. (-2, 1)
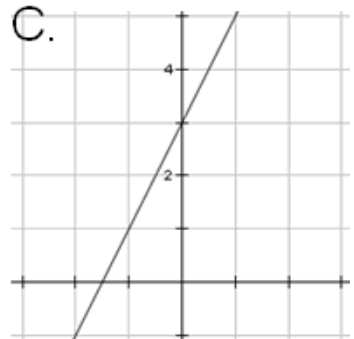B. (-2, 3)
C. (-4, 2)
D. (-4, 4)

13.

On a test, Cody loses 2 points for every incorrect answer. He gains 1 point for every correct answer. Which graph BEST represents all possible combinations of incorrect answers (x) and correct answers (y) if Cody's total score is 3?
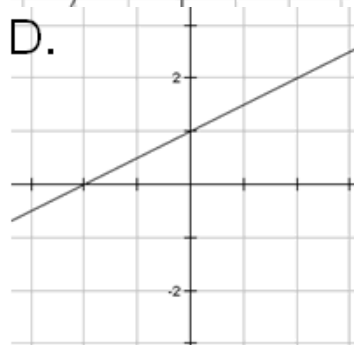
A.

A.

B.

B.

C.

C.

D.

D.

14.

The volleyball team is having a carwash fundraiser. The cost of each carwash is $5. They are also selling season ticket packages to their upcoming volleyball season for $40 each. The goal of the team is to make at least $2000 from the combined totals of the two fundraisers. So far, the team has sold 41 season ticket packages.

How many cars must they wash in order to meet the team goal of $2000?

A. 728 cars.
B. 328 cars.
C. 72 cars.
D. 47 cars.

15.

The formula $d = rt$ can be used to calculate the distance (d) an object travels, using its rate of speed r and the time it travels t. Using this formula, which shows the rate the object traveled?
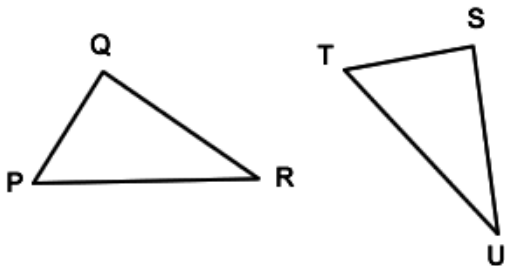
A. $d + t$
B. $d \div t$
C. $t + d$
D. $t \div d$

16.

Why is one of the square roots of any positive number less than zero?

A. because a negative number times a negative number is a positive number
B. because a negative number times a negative number is a negative number
C. because a negative number times a positive number is a negative number
D. because a negative number times a positive number is a positive number

17.

A city park has two congruent flowerbeds. The flowerbeds are shown as triangles PQR and STU. Which angle is congruent to ∠P?

A. ∠R
B. ∠S
C. ∠T
D. ∠U

18.

Amy needed to rent a car for a day so she researched two rental companies. Company A charges a flat rate of $25 plus $0.15 for every mile she drove the car. Company B charges a flat rate of $50 plus $0.05 for every mile she drove the car. If Amy had to drive a total of 370 miles, which rental car company would be a better deal and by how much?

A. Company A by $12
B. Company A by $80.50
C. Company B by $12
D. Company B by $68.50

19.

Trevor wants to buy one magazine and some books. The magazine costs $3. The books cost $5 each. If Trevor spends y amount of dollars, which equation shows how many books (x) he can buy?

A. $y = x + 2$
B. $y = x + 8$
C. $y = 3x + 5$
D. $y = 5x + 3$

20.

A square-shaped playground has an area of 290 ft^2. Approximately, how long is one side of the playground?

A. 12 ft
B. 17 ft
C. 36 ft
D. 73 ft

21.

3, 5, 7, 9, 11, 13,...

The arithmetic sequence represents the values from $x = 1$ through $x = 6$. Which linear function matches this sequence?

A. $y = 2x + 1$
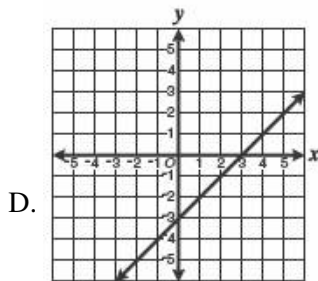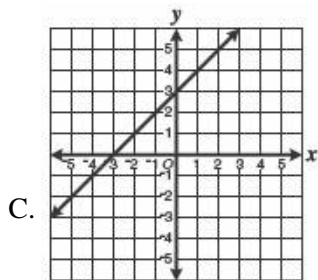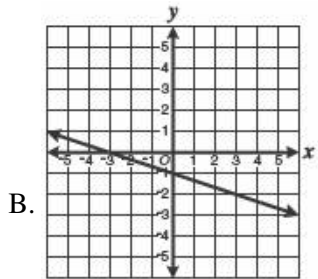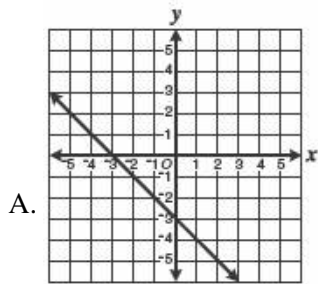B. $y = 3x$
C. $y = x + 2$
D. $y = 3x - 2$

22.

3, 7, 11, 15, 19,...

The arithmetic sequence for $x = 1$ through $x = 5$ is shown. Determine the slope of the associated linear function.

A. -4
B. $-\frac{1}{4}$
C. $\frac{1}{4}$
D. 4

23. **Which graph best represents the equation of the line with slope of 1 and *y*-intercept of –3?**

A.

B.

C.

D.

24.

When graphed, which situation's data would be linear?

A. The temperature of the roof of a house every hour for 24 hours.
B. A person's body temperature every hour for a year.
C. The temperature of water rising 3°F every hour.
D. The daily temperature of a city for a year.

25. Wrangell–St. Elias National Park and Preserve in Alaska covers 13,200,000 acres. What is 13,200,000 written in scientific notation?

A. 1.32×10^5

B. 1.32×10^6

C. 1.32×10^7

D. 1.32×10^8

Answer Key

1. A) 40 yards

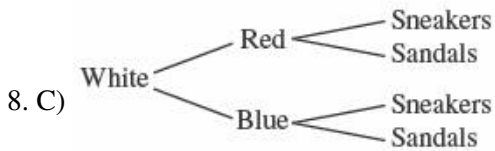2. B) $\dfrac{1}{3}$

3. C) 26

4. A) 11

5. B) 7 miles/hour

6. D) $2d + 0.25$
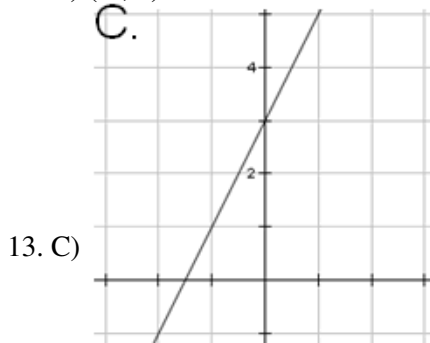
7. C) $50 + 30h \leq 140$

8. C)

9. D) 48

10. D) 9, 10, 11, 12, 13

11. D) $y = -1.52x + 38$

12. B) (-2, 3)

13. C)

14. C) 72 cars.

15. B) $d \div t$

16. A) because a negative number times a negative number is a positive number
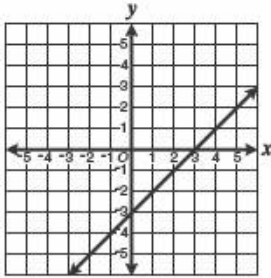
17. B) $\angle$S

18. C) Company B by $12

19. D) $y = 5x + 3$

20. B) 17 ft

21. A) $y = 2x + 1$

22. D) 4

23. D)

24. C) The temperature of water rising 3°F every hour.

25. C) 1.32×10^7