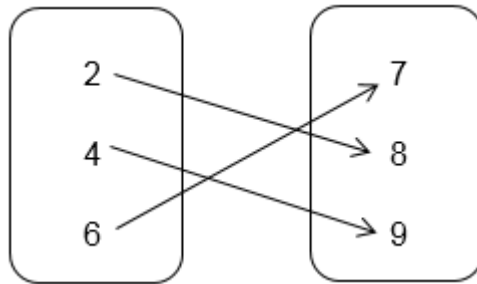


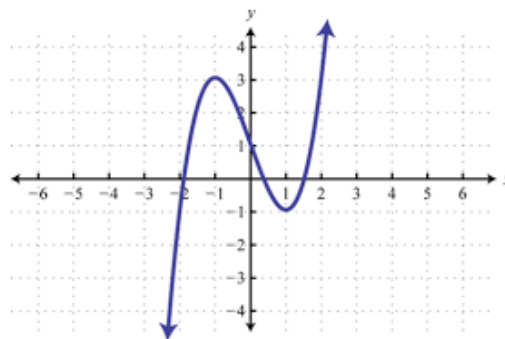
Name: _____

2025 PAP Grade 7 Semester Exam Review

1. Do the following representations show y as a function of x ? **8.5G**



YES or **NO**



YES or **NO**

$\{(0, 12), (4, 18), (6, 3), (5, 2), (4, 7)\}$

YES or **NO**

X	-3	3	-2	2
Y	14	25	10	25

YES or **NO**

2. Which equation represents the relationship between x and y in the table below? **8.5B**

x	y
3	16
5	20
6	22
10	30

A $y = 2x + 10$

C $y = 2x - 10$

B $y = \frac{1}{2}x + 10$

D $y = \frac{1}{2}x - 10$

3. Correctly label the Venn diagram below to show the relationship between the subsets of real numbers. **8.2A**

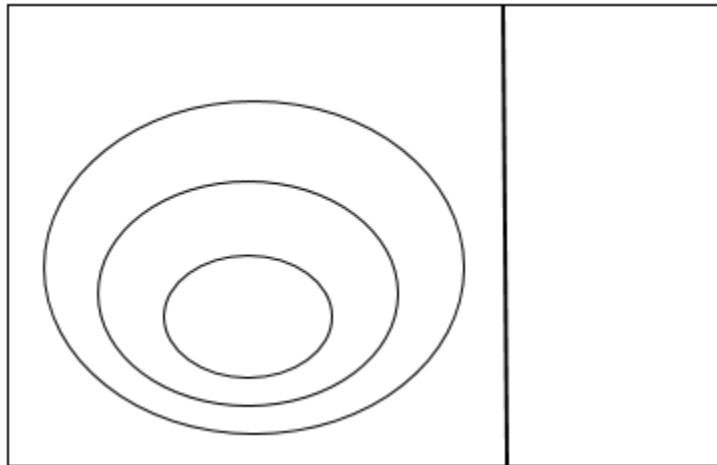
Whole

Rational

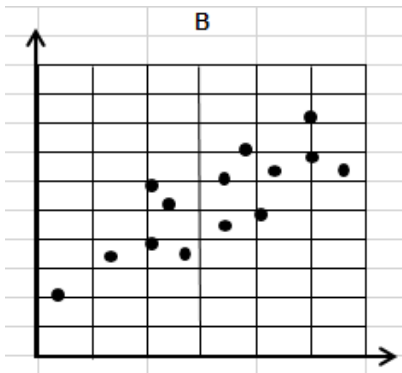
Integer

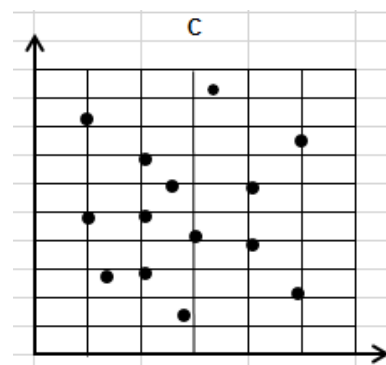
Irrational

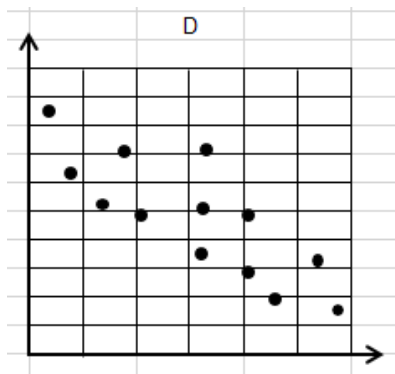
Natural



4. Using the scatterplots below, label each graph with the appropriate association (positive, negative, or no correlation) and describe if it is linear or non-linear. **8.11A**

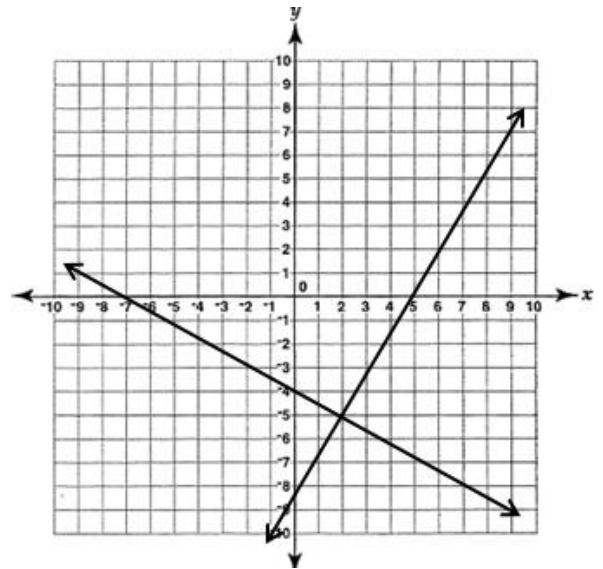






5. What is the solution to the system of equations graphed below? 8.9A

- A (5, 2)
- B (-5, -2)
- C (2, -5)
- D (-2, -5)



6. Write an inequality or equation for each problem below. 8.8A

Mini-golf course A has an entrance fee of \$8.20, and then a charge of \$2.00 per game. Mini-golf course B has an entrance fee of \$4.80, and then a charge of \$3.00 per game. Write an equation to determine x , the number of games needed to be played for both courses to cost the same.

Equation _____

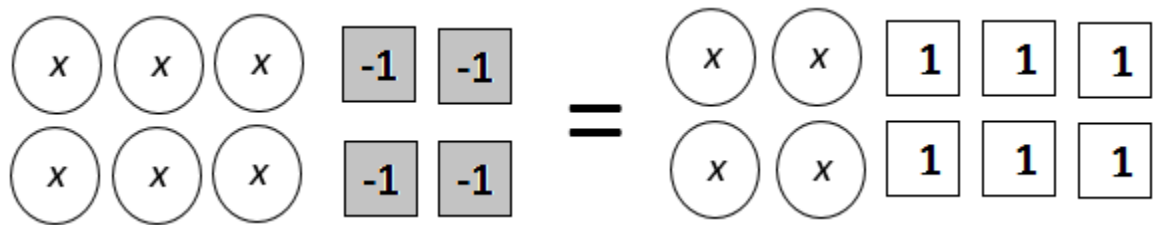
Corey earns \$50 for each insurance policy he sells plus \$500 each week. Maria earns \$25 for each policy she sells plus \$250 each week. Write an inequality to show how many policies each employee will need to sell so that Maria earns the same or more than Corey.

Inequality _____

7. Order the following numbers from least to greatest. 8.2D

$$8\frac{3}{8}, \quad 8.25, \quad 3\pi, \quad \sqrt{67}$$

8. An equation is modeled below. **8.8C**



What value of x makes this equation true?

9. Which is the equation for the values in the table? **8.5I**

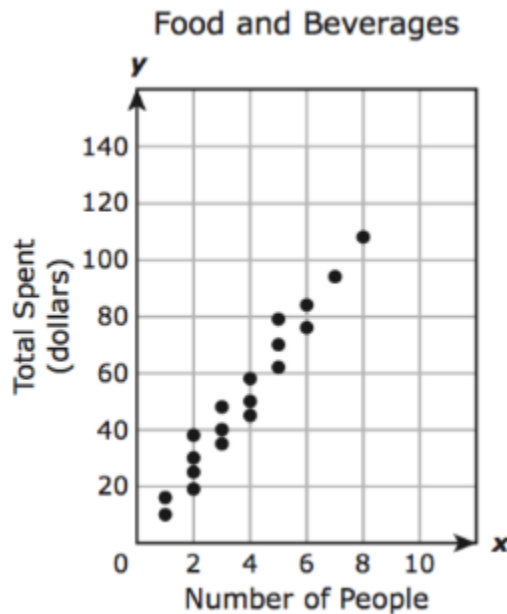
x	-10	10	20	30
y	-7	3	8	13

- A** $y = -\frac{1}{2}x - 2$
- B** $y = -2x + 2$
- C** $y = 2x + 2$
- D** $y = \frac{1}{2}x - 2$

10. Which situation can be represented by the equation $y = 30x + 100$? **7.7A**

- A** A mechanic charges \$100 per hour to repair a car.
- B** The rental cost of a jet ski is \$30 per hour.
- C** You have \$100 in your savings account, and you deposit \$30 per month.
- D** A plumber charges \$30 for a service call plus \$100 per hour to repair a broken water pipe.

11. The manager of a restaurant recorded how many people were in different groups of customers and how much those groups spent on food and beverages. The scatterplot below shows the data she recorded. 8.5D



Based on this scatterplot, about how much money would a group of 10 people be expected to spend on food and beverages at this restaurant?

- A \$135
- B \$115
- C \$105
- D \$150

12. Which of the following tables below shows a proportional relationship? 8.5F

A

x	y
6	14
9	30
12	42

C

x	y
6	36
8	48
12	72

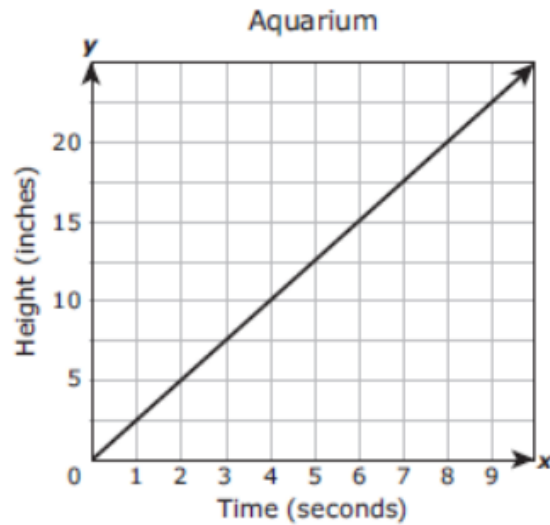
B

x	y
3	15
4	20
6	25

D

x	y
6	22
9	30
12	45

13. An aquarium is being filled with water. The graph shows the height of the water over time as the aquarium is being filled. 8.4B



Which statement best describes the rate of change for this situation?

- A The height of the water increases 20 inches per second.
- B The height of the water increases 1 inch per second.
- C The height of the water increases 5 inches per second.
- D The height of the water increases 2.5 inches per second.

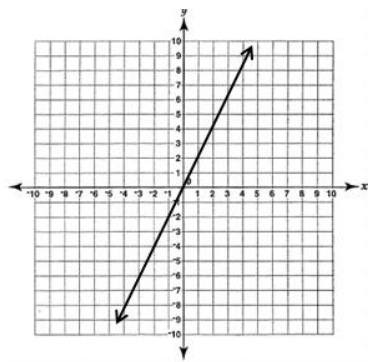
14. Which equation can be used to calculate Stan's earnings for any number of hours? 8.5A



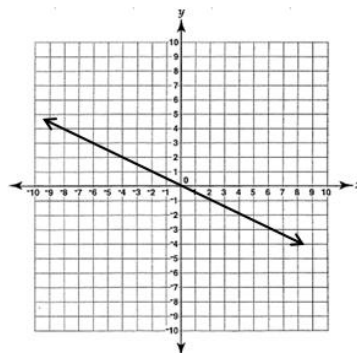
- A $y = x + 17.50$
- B $x = 17.50y$
- C $y = 17.50x$
- D $y = \frac{x}{17.50}$

15. Which of these lines has a slope of 2? **8.4C**

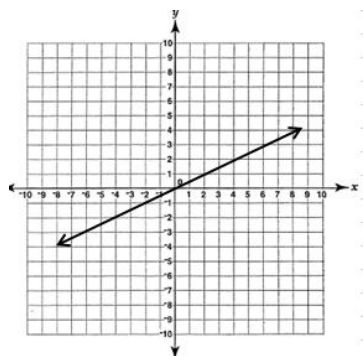
A



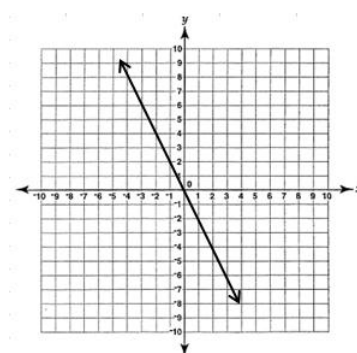
C



B



D



16. In an equation, y varies directly with x . If $x = 8$ when $y = \frac{16}{3}$, what is the value of x when $y = 12$? **8.5E**

A 8

B 18

C $\frac{3}{2}$

D $\frac{2}{3}$

17. Write an equation that best describes the relationship between x and y in the table below. **8.5I**

A $y = x + 3$

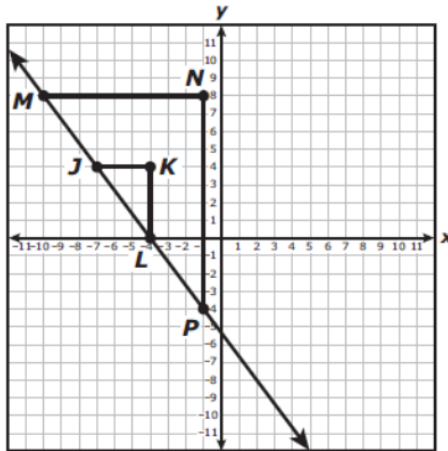
B $y = \frac{1}{4}x + 3$

C $y = \frac{1}{3}x + 3$

D $y = 3x - 10$

x	y
-16	-1
0	3
8	5
24	9

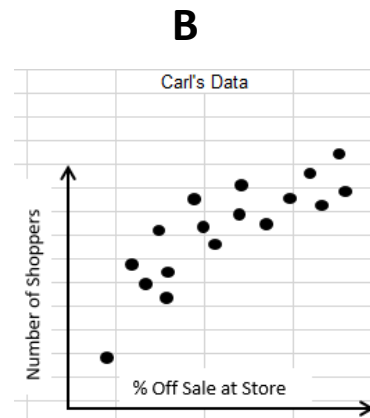
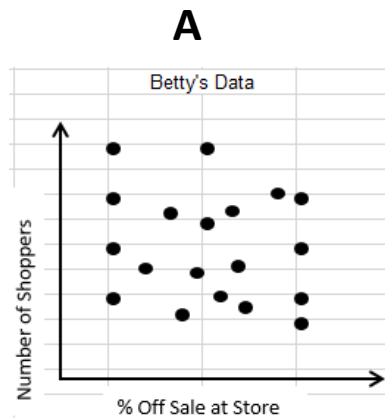
18. Triangle MNP and triangle JKL are similar right triangles. 8.4A



Which proportion can be used to show that the slope of $\overline{JL}$ is equal to the slope of $\overline{MP}$?

- A $\frac{0-(-7)}{4-(-4)} = \frac{-4-(-10)}{8-(-1)}$
- B $\frac{0-4}{-4-(-7)} = \frac{-4-8}{-1-(-10)}$
- C $\frac{0-(-4)}{4-(-7)} = \frac{-4-(-1)}{8-(-10)}$
- D $\frac{-4-(-7)}{0-4} = \frac{-1-(-10)}{-4-8}$

19. Carl and Betty collected data on the number of shoppers at their favorite store on days with percent off sales. They each made a scatterplot of the data. 8.5C



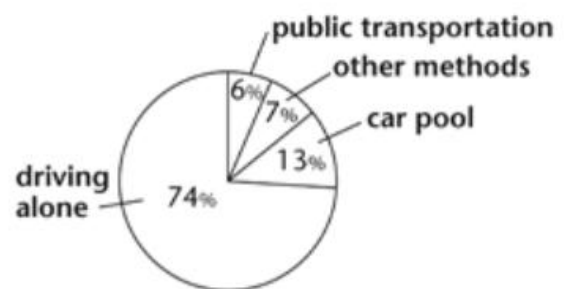
Which scatterplot shows a linear relationship?

- A Graph A
- B Graph B

20. For each question below, **write an equation** that represents the relationship. Circle **YES** if a situation represents a proportional relationship and **NO** if a situation does not represent a proportional relationship. **8.5H**

- 1) A job at a coffee shop paying \$15.25 an hour. _____ **YES or NO**
- 2) The cost of purchasing apples for \$1.75 per pound plus a shipping fee of \$0.16 per pound. _____ **YES or NO**
- 3) Bobby has 13 more freckles than his sister Abigail. _____ **YES or NO**
- 4) At a farm stand, each basket of cherries costs \$3.75 per pound plus \$2.00 for the basket. _____ **YES or NO**
- 5) For every minute you bicycle, you burn 62 calories. _____ **YES or NO**

21. The circle graph shows the different types of transportation employees of a particular company use to get to work. If there are 1,500 employees, how many of them get to work by public transportation? **7.6G**



22. Harry is doing a traffic survey. He records the speeds of cars passing through two different intersections. What is the mean absolute deviation of the data in the table? **8.11B**

Intersection (miles per hour)	24	25	25	30
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23. Matthew works with machines that measure the weights and widths of very small objects. He weighed a piece of sand that was 0.0000031 gram. What is this number in scientific notation? **8.2C**

A 3.1×10^{-6}

B 3.1×10^{-5}

C 3.1×10^5

D 3.1×10^6

24. Which set of ordered pairs is a function? **8.5G**

A $\left(\frac{2}{3}, -\frac{3}{2}\right), \left(-\frac{4}{3}, \frac{5}{7}\right), \left(\frac{2}{3}, \frac{7}{2}\right), \left(\frac{7}{5}, -\frac{2}{7}\right)$

B $\left(2, \frac{3}{10}\right), \left(-\frac{4}{2}, 5.31\right), \left(2, 7\frac{3}{5}\right), (-4, -2.22)$

C $\left(-\frac{2}{7}, 3.14\right), (-4, 5), \left(-\frac{2}{7}, -\frac{7}{7}\right), \left(\frac{7}{2}, -\frac{7}{2}\right)$

D $(2.22, 3.14), \left(-\frac{4}{5}, \frac{5}{4}\right), \left(-\frac{2}{3}, -\frac{7}{5}\right), \left(\frac{7}{2}, -\frac{2}{11}\right)$

25. Which situation can be modeled by the inequality $10x + 75 > 6.50x + 120$? **8.8B**

A Membership at Gym A costs \$120 down plus \$6.50 per month. Gym B charges \$10 own plus \$75 per month. After how many months will Gym A cost less in total than Gym B?

B Membership at Gym A costs \$120 down plus \$6.50 per month. Gym B charges \$10 own plus \$75 per month. After how many months will Gym B cost less in total than Gym A?

C Talia has \$75. Her brother Caleb has \$120. Talia saves \$10 per week. Her brother saves \$6.50 per week. After how many weeks will Talia have more money than Caleb?

D Talia has \$75. Her brother Caleb has \$120. Talia saves \$10 per week. Her brother saves \$6.50 per week. For how many weeks will Talia have less money than Caleb?