WALT WHITMAN MIDDLE SCHOOL 246

Grade 8

Name: _____

Due: <u>Friday, September 5, 2025</u>

Dear 246 Scholars,

Throughout the school year, you have worked hard to build a strong foundation of Mathematics skills. You have grown in the past year academically, socially, and emotionally.

During your summer break, I encourage you to continue fostering a love of learning at home in preparation for grade 8. Create a plan to complete the summer packet.

The assignment will be used as data to help your teachers plan for instruction to better support you. In addition, it will count as 5% of your first marking period grade.

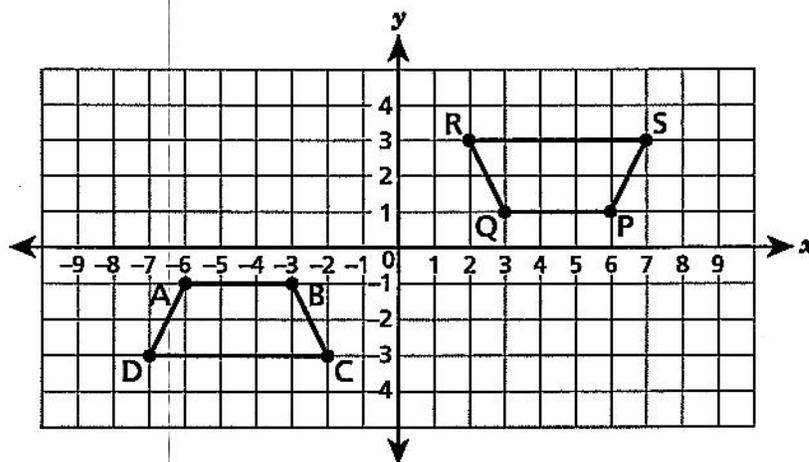We look forward to seeing you on Thursday, September 4.

Have a great summer

WALT WHITMAN MIDDLE SCHOOL 246

33 What is the value of the expression $2^5 \cdot 10^0 \cdot 3^{-2}$?

- **A** -288
- **B** -90
- **C** $\dfrac{0}{9}$
- **D** $\dfrac{32}{9}$

34 Trapezoid ABCD was rotated 180° about the origin to create trapezoid PQRS, as shown below.

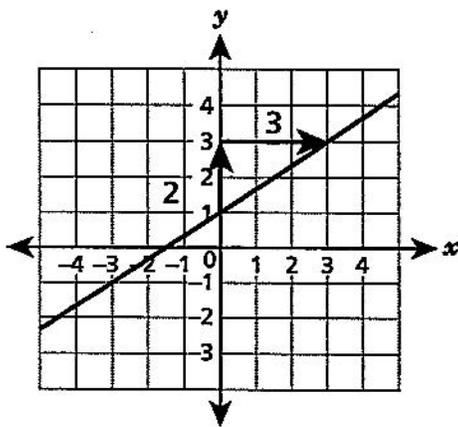Which statement about the trapezoids is true?

- **A** Angle A is congruent to angle S.
- **B** Angle C is congruent to angle Q.
- **C** Side BC is congruent to side QR.
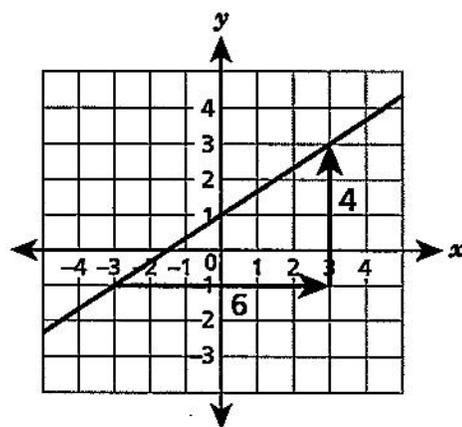- **D** Side DC is congruent to side RQ.

GO ON

35 Brayden and Hannah were asked to calculate the slope of the same line. Brayden calculated the slope to be $\frac{2}{3}$ and Hannah calculated the slope to be $\frac{4}{6}$. Their work is shown below.

BRAYDEN'S WORK

HANNAH'S WORK

Which statement is true?

A   Only Brayden calculated the slope correctly.

B   Only Hannah calculated the slope correctly.

C   Both Brayden and Hannah calculated the slope correctly.

D   Neither Brayden nor Hannah calculated the slope correctly.

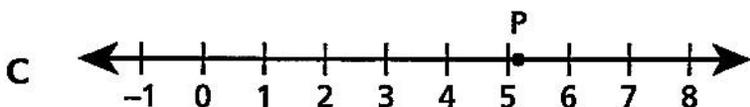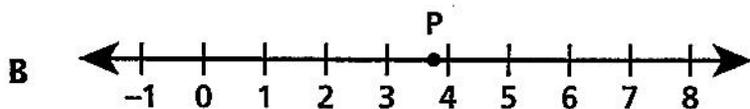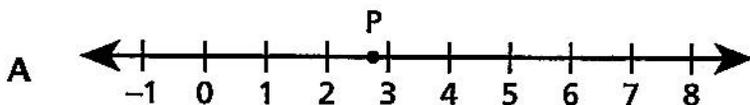**36** The table of values shown below represents a relation.

x	y
−2	−12
−1	−7
0	−2
1	3
2	8

Which statement describes the relation?

A   The table represents a function because each input has only one output.

B   The table represents a function because each output has only one input.

C   The table does not represent a function because each input has only one output.

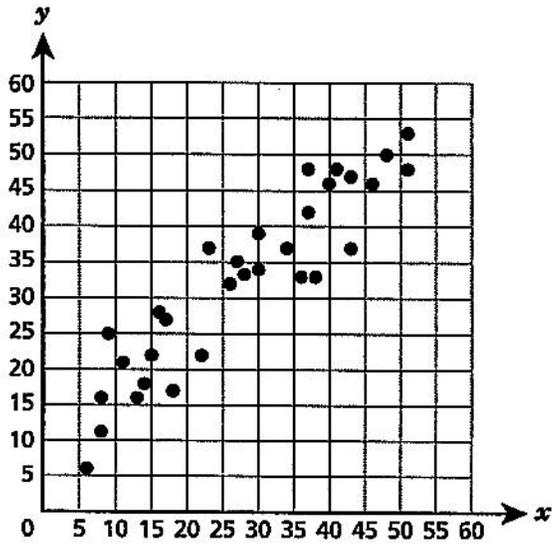D   The table does not represent a function because each output has only one input.

37 On which number line does point P represent the value of the expression $\sqrt{4} + \sqrt{10}$?

A

B

C

D

GO ON

38 A scatter plot is shown below.

Which statement **best** describes the association between x and y?

A   There is a positive, linear association.

B   There is a negative, linear association.

C   There is a positive, nonlinear association.

D   There is a negative, nonlinear association.

39 This question is worth 1 credit.

A table of values for a linear function is shown below.

x	y
−18	−6
−8	−1
0	3
4	5
6	6

What is the rate of change for this function?

Answer _____

GO ON

40 This question is worth 1 credit.

A circular dart board has a circumference of 17.75π inches. What is the radius, in inches, of the dart board?

Answer _____ inches

41 **This question is worth 1 credit.**

David and Lisa each earn money by mowing lawns. They both charge a one time maintenance fee and an hourly rate. David's total charges, based on the number of hours he mows a lawn, are shown in the table below. The total charges, y, in dollars, for Lisa mowing the lawn for x hours is represented by the equation $y = 6x + 12$.

DAVID'S CHARGES

Time Mowed (hours)	Total Charges (dollars)
0.5	17.50
1	20.00
2	25.00

What is the difference, in dollars, between the one time maintenance fee David charges and the one time maintenance fee Lisa charges?

Answer $ _____

42 This question is worth 2 credits.

Classify $\sqrt{1.44}$ as being rational or irrational.

Explain how you know your answer is correct.

_____

_____

_____

43 This question is worth 2 credits.

The equations of two functions are shown below.

Function A: $y = 3x + 8$

Function B: $y = x^2 + 2$
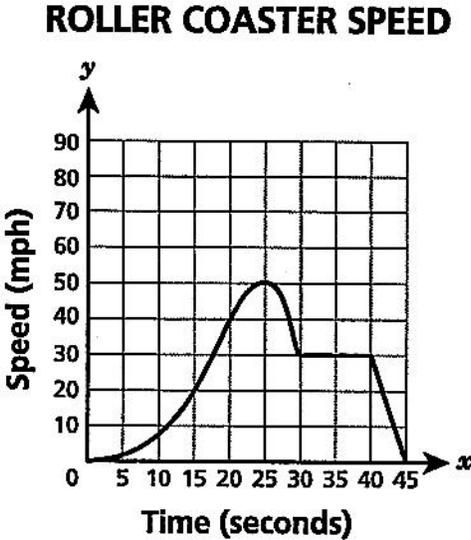
Classify each function as linear or nonlinear.

Explain how you determined your answer.

_____

_____

_____

44 This question is worth 2 credits.

The graph shown below represents the time and speed of a roller coaster over the course of the entire ride.

ROLLER COASTER SPEED

Based on the graph, during what interval of time, in seconds, is the speed, in miles per hour, of the roller coaster constant? Be sure to include what the constant speed is, in miles per hour, for that interval in your answer.

Explain your answer.

_____

_____

_____

45 This question is worth 2 credits.

An equation is shown below.

$$\frac{2}{3}(3x + 9) = x - 4$$

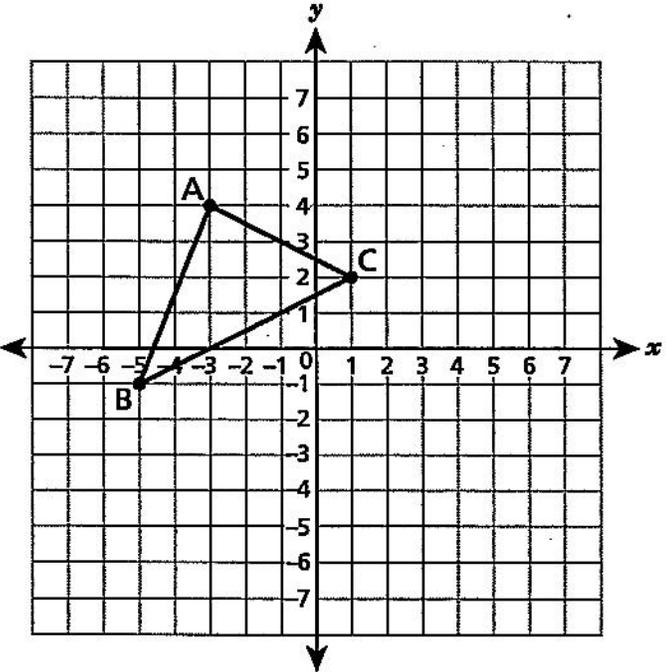What value of x will make the equation true?

Show your work.

Answer $x = $ _____

46 This question is worth 2 credits.

Triangle ABC is graphed on the coordinate plane shown below. Triangle ABC will be reflected over the y axis to create triangle A'B'C'.
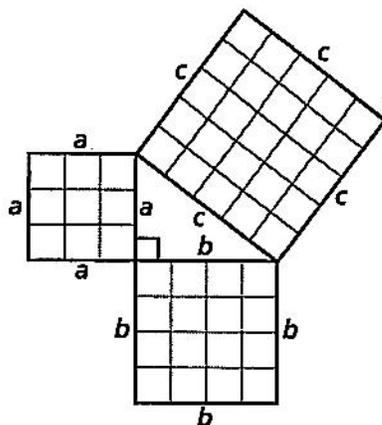

What will be the coordinates of vertex A' ?

Explain how you determined your answer.

_____

_____

_____

47 This question is worth 2 credits.

A student used the diagram shown below to support their work in representing the relationship among the lengths of the sides, in units, of a right triangle.

The student then showed how the diagram relates to the Pythagorean theorem, but made an error as shown below.

$$a^2 + b^2 = c^2$$

$$5^2 + 4^2 = 3^2$$

$$25 + 16 \neq 9$$

$$41 \neq 9$$

What is the error that the student made and what are the correct steps needed to show how the Pythagorean theorem shows the relationship among the lengths of the sides, in units, of the right triangle?
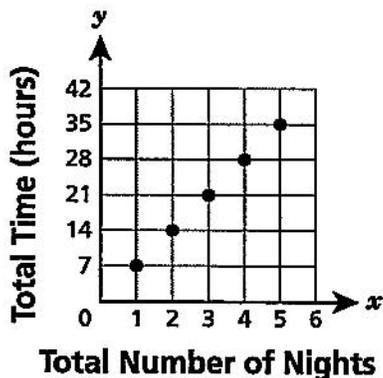
Explain your answer.

_____

_____

_____

GO ON

48 This question is worth 3 credits.

Kaley and Mark each tracked their total amount of sleep, to the nearest hour, for a science project and determined that their total hours of sleep is proportional to the total number of nights. The graph and the table shown below represent the sleep times for Kaley and Mark.

KALEY'S SLEEP TIME

Total Time (hours) vs Total Number of Nights

Points: (1, 7), (2, 14), (3, 21), (4, 28), (5, 35)

MARK'S SLEEP TIME

Total Number of Nights	Total Time (hours)
2	18
3	27
4	36
5	45

Based on the graph and the table, determine who gets more sleep per night.

Explain how you determined your answer.

_____

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_____

STOP