PSSA and Keystone Exams
Summer 2023 Workshops

PSSA, Grade 8 Math

Justin Joins a Gym

Handscoring
Training Set 2

MATHEMATICS SECTION 2

51. Justin is joining a gym. The gym is currently offering a discount on the fee to join and on the monthly rate.

The discounted price, in dollars, the gym charges can be represented by the equation $y = 10x + 5$.

A. What are the slope and the y-intercept of the equation? What do the slope and the y-intercept each represent in this situation?

the slope is the fee to join and the y-intercept is the monthly rate.

The regular price, in dollars, the gym charges can be represented by the equation $y = 15x + 20$.

B. How much money, in dollars, does Justin save the first month by joining the gym at the discounted price rather than at the regular price?

justin saves $20 the first month by joining the gym at the discounted price.

51. ***Continued.*** Please refer to the previous page for task explanation.

Justin creates a system of equations based on the equation from **part A** and the equation from **part B.** The solution to the system of equations is (−3, −25).

C. Why is the point (−3, −25) **not** a possible solution in this situation?

Because justin cannot go to the gym for negative months.

MATHEMATICS SECTION 2

51. Justin is joining a gym. The gym is currently offering a discount on the fee to join and on the monthly rate.

The discounted price, in dollars, the gym charges can be represented by the equation $y = 10x + 5$.

A. What are the slope and the y-intercept of the equation? What do the slope and the y-intercept each represent in this situation?

The slope is ten and the y-intercept is five. The slope is the monthly rate and the y-intercept is the fee to join.

The regular price, in dollars, the gym charges can be represented by the equation $y = 15x + 20$.

B. How much money, in dollars, does Justin save the first month by joining the gym at the discounted price rather than at the regular price?

Justin saves $20 by joining the gym at the discounted price.

51. ***Continued.*** Please refer to the previous page for task explanation.

Justin creates a system of equations based on the equation from **part A** and the equation from **part B.** The solution to the system of equations is (−3, −25).

C. Why is the point (−3, −25) **not** a possible solution in this situation?

The point (-3,-25) is not a solution because is solution can not be negative.

25. Justin is joining a gym. The gym is currently offering a discount on the fee to join and on the monthly rate.

The discounted price, in dollars, the gym charges can be represented by the equation $y = 10x + 5$.

A. What are the slope and the y-intercept of the equation? What do the slope and the y-intercept each represent in this situation?

The slope is 10x and the y Intercept is 5 The slope represents the dollars and the y intercept is the charges

The regular price, in dollars, the gym charges can be represented by the equation $y = 15x + 20$.

B. How much money, in dollars, does Justin save the first month by joining the gym at the discounted price rather than at the regular price?

20 Dollars

25. ***Continued.*** Please refer to the previous page for task explanation.

Justin creates a system of equations based on the equation from **part A** and the equation from **part B**. The solution to the system of equations is (−3, −25).

C. Why is the point (−3, −25) **not** a possible solution in this situation?

Cause he didnt have 25 dollars

MATHEMATICS SECTION 2

51. Justin is joining a gym. The gym is currently offering a discount on the fee to join and on the monthly rate.

The discounted price, in dollars, the gym charges can be represented by the equation $y = 10x + 5$.

A. What are the slope and the y-intercept of the equation? What do the slope and the y-intercept each represent in this situation?

Slope
10
Monthly rate with discount

y-intercept
5
discount fee

The regular price, in dollars, the gym charges can be represented by the equation $y = 15x + 20$.

B. How much money, in dollars, does Justin save the first month by joining the gym at the discounted price rather than at the regular price?

$y = 15x + 20$
$y = 10x + 5$
$5 + 15 = 20$ $

51. ***Continued.*** Please refer to the previous page for task explanation.

Justin creates a system of equations based on the equation from **part A** and the equation from **part B**. The solution to the system of equations is (−3, −25).

C. Why is the point (−3, −25) **not** a possible solution in this situation?

The point shows that Justin does not save any money with the discount.

MATHEMATICS SECTION 2

51. Justin is joining a gym. The gym is currently offering a discount on the fee to join and on the monthly rate.

The discounted price, in dollars, the gym charges can be represented by the equation $y = 10x + 5$.

A. What are the slope and the y-intercept of the equation? What do the slope and the y-intercept each represent in this situation?

The slope is 10 and 5 is the y-intercept. The slope is the monthly rate and 5 is the initial fee to join.

The regular price, in dollars, the gym charges can be represented by the equation $y = 15x + 20$.

B. How much money, in dollars, does Justin save the first month by joining the gym at the discounted price rather than at the regular price?

He saves $20 in the first month.

51. ***Continued.*** Please refer to the previous page for task explanation.

Justin creates a system of equations based on the equation from **part A** and the equation from **part B**. The solution to the system of equations is (−3, −25).

C. Why is the point (−3, −25) **not** a possible solution in this situation?

You cannot pay a negative amount of money. The solution has to be positive for it to make sense. If the solution wees negative, Justin would be recieving money.

MATHEMATICS SECTION 2

51. Justin is joining a gym. The gym is currently offering a discount on the fee to join and on the monthly rate.

The discounted price, in dollars, the gym charges can be represented by the equation $y = 10x + 5$.

A. What are the slope and the y-intercept of the equation? What do the slope and the y-intercept each represent in this situation?

The slope is the discouted price of dollars (y). The y intercept is the gym charges.

$y = mx + b$

slope → m

y-intercept → b

The regular price, in dollars, the gym charges can be represented by the equation $y = 15x + 20$.

B. How much money, in dollars, does Justin save the first month by joining the gym at the discounted price rather than at the regular price?

He started out with the price of 10, now he has 15, which means his dependant variable went up. His y-intercept went from 5 to 20, that's 15 dollars saved by joining the gym.

MATHEMATICS SECTION 2

51. ***Continued.*** Please refer to the previous page for task explanation.

Justin creates a system of equations based on the equation from **part A** and the equation from **part B**. The solution to the system of equations is (-3, -25).

C. Why is the point (-3, -25) **not** a possible solution in this situation?

X Y
(-3, -25)

$\frac{-25}{-3} = \frac{-3x}{-3} + b$ ← That's wrong because you need 2 sets of points to have 2 y's and 2 x's. You also need a number to be infront of -3. For instance, y=1(3)+20

MATHEMATICS SECTION 2

51. Justin is joining a gym. The gym is currently offering a discount on the fee to join and on the monthly rate.

The discounted price, in dollars, the gym charges can be represented by the equation $y = 10x + 5$.

A. What are the slope and the y-intercept of the equation? What do the slope and the y-intercept each represent in this situation?

Slope = $\frac{10}{1}$

Y = 5.

Slope represents, monthly rate. The y intercept is the discount.

The regular price, in dollars, the gym charges can be represented by the equation $y = 15x + 20$.

B. How much money, in dollars, does Justin save the first month by joining the gym at the discounted price rather than at the regular price?

15 20

MATHEMATICS SECTION 2

51. ***Continued.*** Please refer to the previous page for task explanation.

Justin creates a system of equations based on the equation from **part A** and the equation from **part B**. The solution to the system of equations is (−3, −25).
y x

C. Why is the point (−3, −25) **not** a possible solution in this situation?

$y = 10x + 5$ $-3 = 10(-25) + 5$

$-245.$

If you fill in the equation; $y = 10x + 6$ with -3 being the y value, and -25 being the x value, the right side of the equal side does not equal the y value of -3. the right of the equal sign equals -245. -245 does not equal up with -3. Therefore, (-3, -25) can not be a possible solution for $y = 10x + 5$

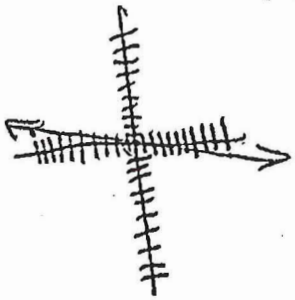
MATHEMATICS SECTION 2

51. Justin is joining a gym. The gym is currently offering a discount on the fee to join and on the monthly rate.

The discounted price, in dollars, the gym charges can be represented by the equation $y = 10x + 5$.

A. What are the slope and the y-intercept of the equation? What do the slope and the y-intercept each represent in this situation?

The slope is $\frac{10}{1}$ and the y intercept is (0,0).



The regular price, in dollars, the gym charges can be represented by the equation $y = 15x + 20$.

B. How much money, in dollars, does Justin save the first month by joining the gym at the discounted price rather than at the regular price?

He saves $5.

51. ***Continued.*** Please refer to the previous page for task explanation.

Justin creates a system of equations based on the equation from **part A** and the equation from **part B**. The solution to the system of equations is (−3, −25).

C. Why is the point (−3, −25) **not** a possible solution in this situation?

Because the slope is not equal to it.

MATHEMATICS SECTION 2

51. Justin is joining a gym. The gym is currently offering a discount on the fee to join and on the monthly rate.

The discounted price, in dollars, the gym charges can be represented by the equation $y = 10x + 5$.

A. What are the slope and the y-intercept of the equation? What do the slope and the y-intercept each represent in this situation?

Slope - 10x
y-intercept - 5

The slope represents the monthly fee. While the y-intercept represents the amount of money he had to pay to join.

The regular price, in dollars, the gym charges can be represented by the equation $y = 15x + 20$.

B. How much money, in dollars, does Justin save the first month by joining the gym at the discounted price rather than at the regular price?

Justin saves 5 dollars per month and 15 dollars in joining.

MATHEMATICS SECTION 2

51. ***Continued.*** Please refer to the previous page for task explanation.

Justin creates a system of equations based on the equation from **part A** and the equation from **part B**. The solution to the system of equations is (−3, −25).

C. Why is the point ($\overset{x}{-3}$, $\overset{y}{-25}$) **not** a possible solution in this situation?

Work

$-25 = 10(-3) + 5$

$-30 + 5$

$-25 \neq -20$

The negative coordinates don't tell how much Justin will pay. The negatives he found don't fit in the equation. The ordered pairs that Justin picked do not go with the equation.

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51. Justin is joining a gym. The gym is currently offering a discount on the fee to join and on the monthly rate.

The discounted price, in dollars, the gym charges can be represented by the equation $y = 10x + 5$.

A. What are the slope and the y-intercept of the equation? What do the slope and the y-intercept each represent in this situation?

Slope: 10
y-intercept: 5

The slope, 10, shows how much the monthy rate is. It is how much Justin spends per month.

The y-intercept, 5, shows how much it costs just to join the gym. Justin spent $5 to join the gym.

The regular price, in dollars, the gym charges can be represented by the equation $y = 15x + 20$.

B. How much money, in dollars, does Justin save the first month by joining the gym at the discounted price rather than at the regular price?

discount: $y = 10x + 5$
Normal: $y = 15x + 20$

$y = 10(1) + 5$
$y = 10 + 5$
$y = 15$

Justin saves $20 the first month

35
-15
20

$y = 15(1) + 20$
$y = 15 + 20$
$y = 35$

51. ***Continued.*** Please refer to the previous page for task explanation.

Justin creates a system of equations based on the equation from **part A** and the equation from **part B**. The solution to the system of equations is (−3, −25).

C. Why is the point (−3, −25) **not** a possible solution in this situation?

The point (-3,-25) is not a possible solution because both x and y have negative values. If Justin is looking for the solution, it must be possitive. It must be positive because there is no such thing as negative time.

PSSA Math: Justin Joins a Gym(Grade 8), Training Set Two

Subject: Math Item: Justin Joins a Gym Grade: 8

Name _____

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