PSSA and Keystone Exams
Summer 2023 Workshops

PSSA, Grade 8 Math

Justin Joins a Gym

Handscoring
Practice Set 2*

*Responses in this set do not have true scores. Apply scores based on scoring criteria.

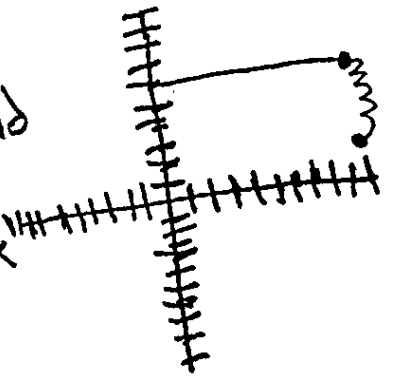
MATHEMATICS SECTION 2

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 6x. The slope and the y-intercept both make 10x to 6x.



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 $35 because when you add all the numbers up they make up $35 = 15+20. 15x+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).

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

This is not possible because the slope is (-15;35). I found this because I added A with B then these were the last numbers.

(10+5) + (15+20) =

15 + 35

15
+35
50

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 y-intercept = 5

The y-intercept in this situation represents the fee to join the gym, which is 5 dollars in this case.
The slope in this situation represents the monthly rate, which is 10 dollars in this case.

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?

$y = 10(1) + 5$ $y = 15(1) + 20$ $35 - 15 = 20$
$y = 10 + 5$ $y = 15 + 20$
$y = 15$ $y = 35$

Justin saves $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 (-3,-25) is not possible in this situation because the x and y values cannot be negative. In this case, the x stands for months and there can't be -3 months. The y stands for how much money the gym charges and the gym can't charge -25 dollars.

The x and y values in this situation cannot be negative because of what they represent in the equation; therefore, the point (-3,-25) cannot be a possible solution in this situation.

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?

$Y = 10x + 5$

The y-intercept represents how much it will cost without the fee.

y intercept-5
slope-15

The slope represents how much it will cost all together.

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?

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

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

Justin saved $20.00.

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 in this situation. It is not because no matter how many times you try to solve the system of equations, that will not be the correct answer.

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 is 10 the y-intercept is 5

the 10 is the price and the 5 is tax

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 on the discount than the regular 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?

we are not using graphs to solve the problem.

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 and y-intercept represent the monthly rate and the joining fee. The y-intercept is the joining fee and the slope is the monthly 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?

He saves 20 dollars.

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 a negative would mean the gym is paying him to go there.

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 10x.
The y-intercept is 5.
The slope represents how much Justin has to pay per month and the y-intercept represents 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 can save $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?

Point (-3,-25) is not a possible solution in this situation because it does not match up with the equations given in parts A and B.

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 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?

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

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

$35 - 15 = 20$

Justin saves 20 dollars.

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 negative amounts of money. When money is involved, there can't be a negative solution. -3 would represent the number of months but it's not possible to have -3 months or -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?

I think it represents it by saying that thats how much he spent to join the gym or how many hours he went to 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?

Justin saved 300Dollars.

I did 15x20 and it gave me 300.

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?

I think (-3-25) is not a situation because it dont talk about (-3-25) when he was joining the gym.

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 represents the initial cost and the y-intercept is the extra cost per month

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 twenty dollars

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?

point (-3,-25) isn't possible becau
se when the two equations are
graphed they form parallel
lines

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 = $\frac{10}{1}$
(10 dollars per month)

y-intercept = 5
(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?

$15x + 20 = 10x + 5$
$-5 \quad -5$

$15x + 15 = 10x$
$-10x \quad -10x$
$5x = -15$

he saves $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).

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

(-3,-25) is not a possible solution in this situation because it is negative. Since this system deals with money, and you can't pay a fee with a negative amount of dollars, this is not a possible solution.

PRACTICE SET 2*

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

Name_____

Number	Score	Consensus	Notes
P2-1			
P2-2			
P2-3			
P2-4			
P2-5			
P2-6			
P2-7			
P2-8			
P2-9			
P2-10			

*** Responses in this set do not have true scores. Apply scores based on scoring criteria.**