

PSSA and Keystone Exams
Summer 2023 Workshops

Keystone Algebra 1

Baskets of Tomatoes

Handscoring
Training Set 1



16. Small baskets of tomatoes are sold at a vegetable stand for \$3 per basket. Large baskets of tomatoes are sold at the stand for \$5 per basket. Only whole numbers of baskets may be purchased.

A customer purchases a total of 8 baskets of tomatoes and pays \$36.

- A. Write and solve a system of equations that models the number of small baskets (x) and the number of large baskets (y) that the customer purchases. Show or explain all your work.

$$\begin{cases} 3x + 5y = 36 \\ x + y = 8 \end{cases} \quad -3(x + y) = 8(-3)$$

$$\begin{array}{r} 3x + 5y = 36 \\ -3x - 3y = -24 \\ \hline 2y = 12 \\ \frac{2y}{2} = \frac{12}{2} \\ y = 6 \end{array}$$

$$\begin{array}{r} x + y = 8 \\ x + 6 = 8 \\ -6 \quad -6 \\ \hline x = 2 \end{array}$$

The customer bought 2 small baskets and 6 large baskets for \$36.



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

Another customer claims that he can purchase a total of 10 baskets of tomatoes and pay \$45.

- B. Use a system of equations that describes this other customer's purchase to explain why the claim is incorrect.

$$\begin{cases} 3x + 5y = 45 \\ x + y = 10 \end{cases} \quad -5(x + y) = -5(10)$$

$$\begin{array}{r} 3x + 5y = 45 \\ -5x - 5y = -50 \\ \hline -2x = -5 \\ \div -2 \quad \div -2 \\ x = 2.5 \end{array}$$

I can stop solving the system now because x does not equal a whole number. You can only purchase whole numbers of baskets. x represents a number of baskets that are a decimal. Therefore, this is how the customer's claim is wrong.

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- A. Write and solve a system of equations that models the number of small baskets (x) and the number of large baskets (y) that the customer purchases. Show or explain all your work.

$$\begin{aligned} 3x + 5y &= 36 \\ x + y &= 8 \end{aligned}$$

$$\begin{aligned} 3(2) + 5(6) &= 36 \\ 2 + 6 &= 8 \end{aligned}$$

T

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

Another customer claims that he can purchase a total of 10 baskets of tomatoes and pay \$45.

- B. Use a system of equations that describes this other customer's purchase to explain why the claim is incorrect.

equation I used

$$3(5) + 5(5) = 45$$

$$3x + 5y = 45$$

$$x + y = 10$$

$$5 + 5 = 10$$

Only one part of the equation will work.

F

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- A. Write and solve a system of equations that models the number of small baskets (x) and the number of large baskets (y) that the customer purchases. Show or explain all your work.

System of equations

$$x + y = 8$$

$$3x + 5y = 36$$

$$x + y = 8$$

$$3x + 5y = 36$$

?

1

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

Another customer claims that he can purchase a total of 10 baskets of tomatoes and pay \$45.

- B. Use a system of equations that describes this other customer's purchase to explain why the claim is incorrect.

Because the customer probably thought that since 45 is inbetween 30 and 50 (the lowest and highest possible costs for ten baskets) it would work but since 45 ends in 5 there is no possible way to get that cost.

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A. Write and solve a system of equations that models the number of small baskets (x) and the number of large baskets (y) that the customer purchases. Show or explain all your work.

$$x+y=36$$

6 / 1000

Another customer claims that he can purchase a total of 10 baskets of tomatoes and pay \$45.

B. Use a system of equations that describes this other customer's purchase to explain why the claim is incorrect.

$$x+y=45 \text{ because nothing u say come out to fit properly}$$

53 / 1000

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A customer purchases a total of 8 baskets of tomatoes and pays \$36.

- A. Write and solve a system of equations that models the number of small baskets (x) and the number of large baskets (y) that the customer purchases. Show or explain all your work.

$$3(x) + 5(y) = 36$$

$$x=2 \quad y=6$$

$$3 \cdot 2 + 5 \cdot 6 = 36$$

$$6 + 30 = 36$$

$$\begin{array}{l} x=2 \\ y=6 \end{array}$$



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

Another customer claims that he can purchase a total of 10 baskets of tomatoes and pay \$45.

- B. Use a system of equations that describes this other customer's purchase to explain why the claim is incorrect.

$$3(x) + 5(y) = 45$$

Nothing can be multiplied by 3, and multiplied by 5, and also added together to get 45.

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A. Write and solve a system of equations that models the number of small baskets (x) and the number of large baskets (y) that the customer purchases. Show or explain all your work.

$\$3.00x + \$5.00y = \$36.00 = 8$ baskets total
 $x = 2$ small baskets, and $y = 6$ large baskets
 $3 \times 2 = 6 + 5 \times 6 = 30$
 $6 + 30 = 36$

109 / 1000

Another customer claims that he can purchase a total of 10 baskets of tomatoes and pay \$45.

B. Use a system of equations that describes this other customer's purchase to explain why the claim is incorrect.

This answer is impossible to find due to the fact that baskets cannot be divided into decimals.

94 / 1000

Small baskets of tomatoes are sold at a vegetable stand for \$3 per basket. Large baskets of tomatoes are sold at the stand for \$5 per basket. Only whole numbers of baskets may be purchased.

A customer purchases a total of 8 baskets of tomatoes and pays \$36.

A. Write and solve a system of equations that models the number of small baskets (x) and the number of large baskets (y) that the customer purchases. Show or explain all your work.

$$3x + 5y = 36$$

$$8 = x + y$$

The customer bought 2 small baskets of tomatoes (x), and 6 large baskets of tomatoes (y). I got this by substituting trying different x and y numbers that added up to the 8 baskets that he bought, and then trying the solutions in both equations, and (2,6) worked in both equations.

297 / 1000

Another customer claims that he can purchase a total of 10 baskets of tomatoes and pay \$45.

B. Use a system of equations that describes this other customer's purchase to explain why the claim is incorrect.

$$3x + 5y = 45$$

$$10 = x + y$$

The customer's claim is incorrect because if you substitute x (number of small baskets) and y (number of large baskets) into the equation, no two whole numbers fit that add up to 10 baskets and equal \$45 in all.

230 / 1000

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A customer purchases a total of 8 baskets of tomatoes and pays \$36.

- A. Write and solve a system of equations that models the number of small baskets (x) and the number of large baskets (y) that the customer purchases. Show or explain all your work.

$$36 = 3x + 5y$$
$$36 = 3(2) + 5(6)$$

$$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array}$$
$$\begin{array}{r} 5 \\ \times 6 \\ \hline 30 \end{array}$$

$$\begin{array}{l} x = 2 \\ y = 6 \end{array}$$

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

Another customer claims that he can purchase a total of 10 baskets of tomatoes and pay \$45.

- B. Use a system of equations that describes this other customer's purchase to explain why the claim is incorrect.

$$45 = 3x + 5y$$

No combination of baskets can be made to end up having to pay \$45.

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- A. Write and solve a system of equations that models the number of small baskets (x) and the number of large baskets (y) that the customer purchases. Show or explain all your work.

$$3x + 5y = 36$$

$$\underline{x + y = 8}$$

$$\begin{array}{r} x + y = 8 \\ -x - x \\ \hline y = 8 - x \end{array}$$

$$\begin{array}{r} x + y = 8 \\ 2 + y = 8 \\ -2 - 2 \\ \hline y = 6 \end{array}$$

$$\{(2, 6)\}$$

$$\begin{array}{r} 3x + 5y = 36 \\ 3x + 5(8 - x) = 36 \\ 3x + 40 - 5x = 36 \\ -2x + 40 = 36 \\ -40 -40 \\ \hline -2x = -4 \\ \frac{-2}{-2} \quad \frac{-4}{-2} \\ x = 2 \end{array}$$

The customer bought 2 small baskets and 6 large baskets.

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

Another customer claims that he can purchase a total of 10 baskets of tomatoes and pay \$45.

- B. Use a system of equations that describes this other customer's purchase to explain why the claim is incorrect.

$$\begin{array}{r} x+y=10 \\ 3x+5y=45 \\ \hline \end{array}$$

$$\begin{array}{r} x+y=10 \\ -x-x \\ \hline y=10-x \end{array}$$

$$\begin{array}{r} 2.5+y=10 \\ -2.5-2.5 \\ \hline y=7.5 \end{array}$$

$$\begin{array}{r} 3x+5y=45 \\ 3x+5(10-x)=45 \\ 3x+50-5x=45 \\ -2x+50=45 \\ -50-50 \\ \hline -2x=-5 \end{array}$$

$$\begin{array}{r} -2x=-5 \\ \hline -2-2 \end{array}$$

$$x=2.5 \quad x \neq 3$$

You can only
buy full baskets, so
he wouldn't be able
to buy 10 baskets paying
only \$45.

Small baskets of tomatoes are sold at a vegetable stand for \$3 per basket. Large baskets of tomatoes are sold at the stand for \$5 per basket. Only whole numbers of baskets may be purchased.

A customer purchases a total of 8 baskets of tomatoes and pays \$36.

A. Write and solve a system of equations that models the number of small baskets (x) and the number of large baskets (y) that the customer purchases. Show or explain all your work.

$3x + 5y = 36$ You have 8 baskets, so you plug in number combinations that equal 8 baskets... but also equal 36 dollars. If you plug in the numbers 2 for x and 6 for y you get $6 + 30$ which equals 36.

194 / 1000

Another customer claims that he can purchase a total of 10 baskets of tomatoes and pay \$45.

B. Use a system of equations that describes this other customer's purchase to explain why the claim is incorrect.

Because you can not have a combination of numbers that equal 45 dollars.

72 / 1000

Keystone: Baskets of Tomatoes (Algebra 1), Training Set One

Subject: Algebra 1

Item: Baskets of Tomatoes

Grade: HS

Name _____

Number	Score	Notes
T1-1		
T1-2		
T1-3		
T1-4		
T1-5		
T1-6		
T1-7		
T1-8		
T1-9		
T1-10		