

Using Algebra to Represent Real Life Situations

1. Matching: which expression best represents each situation?

My new order at Snack Shack	$C = 5.50s + 6.00h$
How much a cab costs	$C = 3.00 + 0.50k$
How much you make after working for 10 hours	$P = 10w$
How far Ms. Decker runs in a certain number of seconds (if she gets a head start)	$d = 70 + 3.8 s$
How far Usain Bolt runs in a certain number of seconds	$d = 10.4 s$

2. You use the expression $y = 200 + 25x$ to describe a situation to a friend. Name as many different situations as possible that would match this expression.

Using Algebra to Solve Problems

1. I got paid 120 dollars for 10 hours of work. What is my hourly wage?

$$P = 10w$$

2. If I order 2 shack burgers, and the total cost of my order is \$29, how many home burgers did I order?

~~$$C = 5.50s + 6.00h$$~~

3. If Usain Bolt can keep up his pace, how long will it take him to run 200 m?

$$d = 10.4 \text{ s}$$

4. If Ms. Decker can keep up her pace, and if she still gets a head start, how long will it take her to run 200 m?

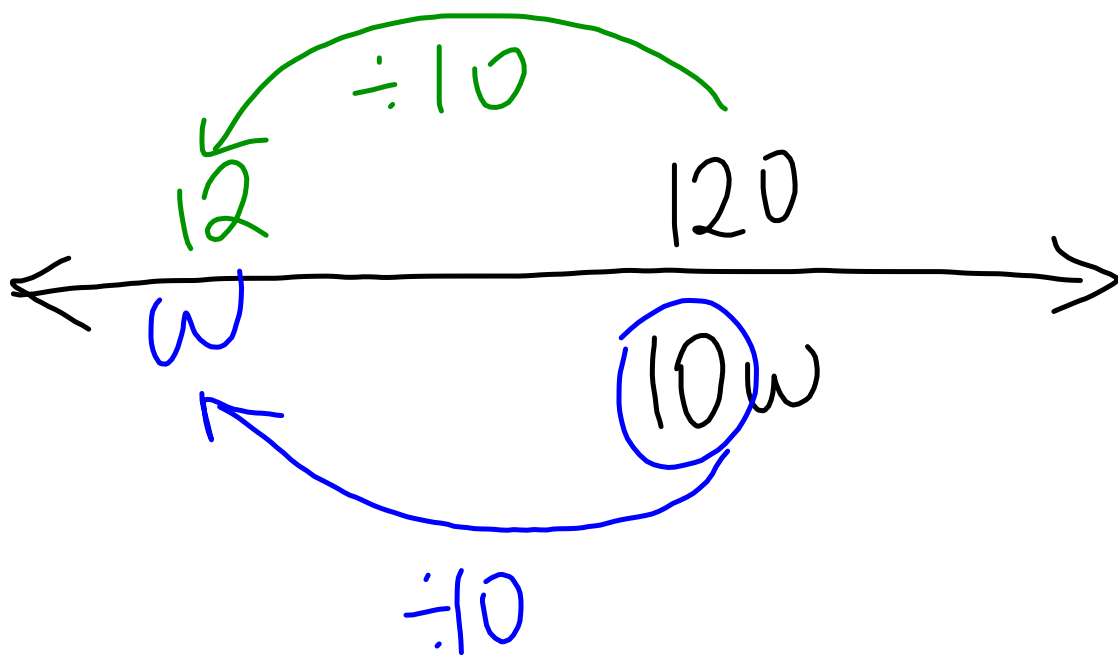
$$d = 70 + 3.8 \text{ s}$$

5. If my taxi ride costs \$13, how far did I travel?

$$C = 3.00 + 0.50k$$

$$P = 10w$$

$$120 = 10w$$



$$\therefore w = 12$$

$$120 = 10w + 20$$

Diagram illustrating the steps to solve the equation $120 = 10w + 20$ using a number line:

- Start with the equation: $120 = 10w + 20$
- Subtract 20 from both sides (indicated by green arrows labeled -20):
 $100 = 10w$
- Divide both sides by 10 (indicated by red arrows labeled $\div 10$):
 $10 = w$

$$\therefore w = 10$$