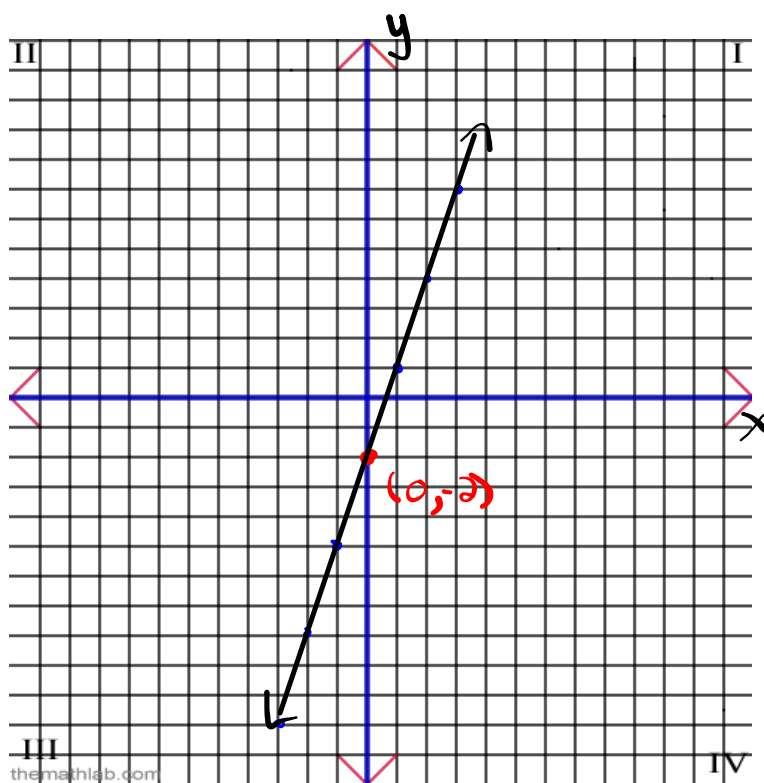


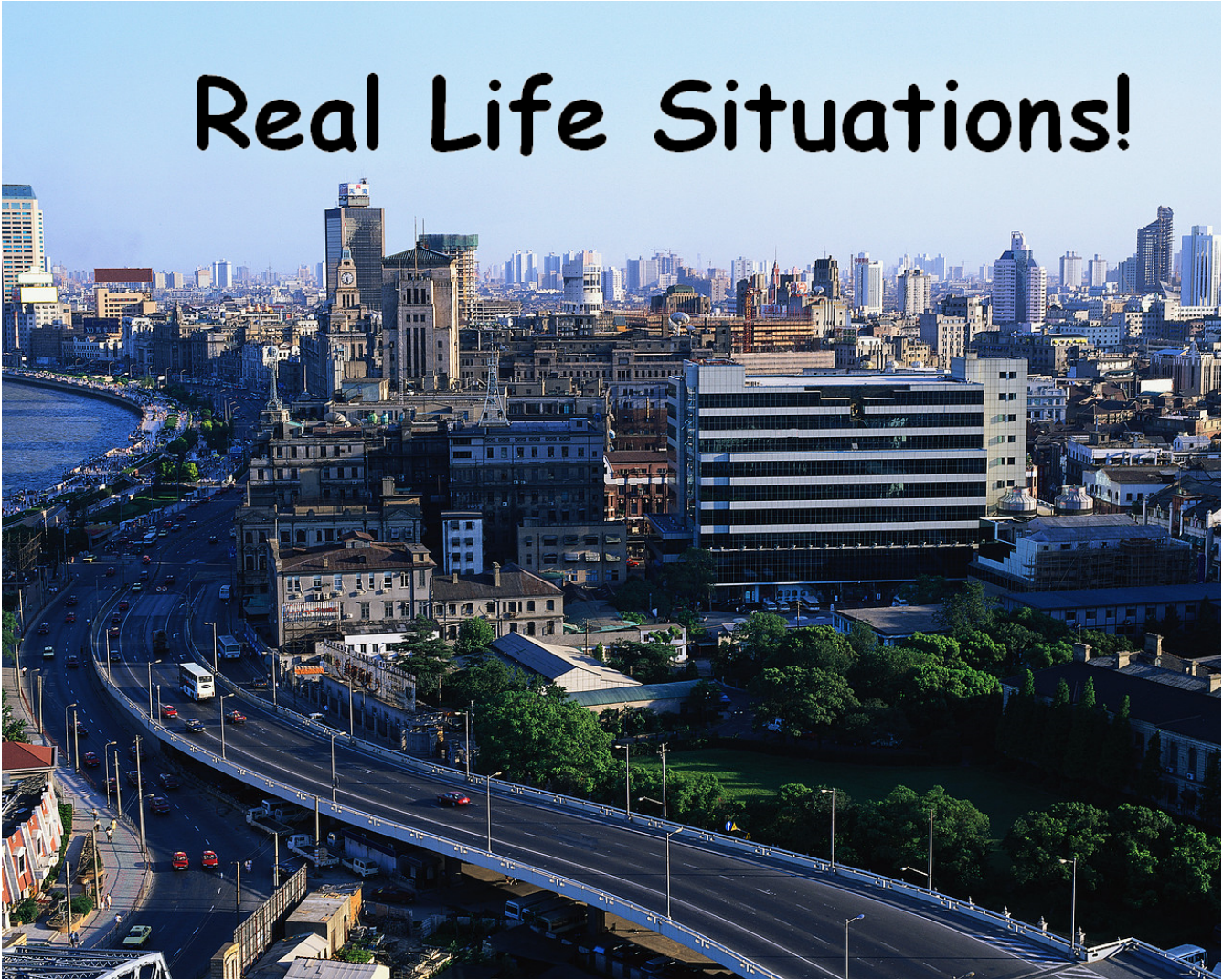
Graph the equation $y = \underline{3}x - \underline{2}$

Slope: $\underline{m = \frac{3}{1}}$

y-int: $\underline{b = -2}$



Real Life Situations!



Slope (m):	Cost per hour, Cost per km, Cost per picture, etc.....
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y-intercept (b):	Initial cost, base rate, initial fee, flat rate, sitting fee, starting cost etc.....
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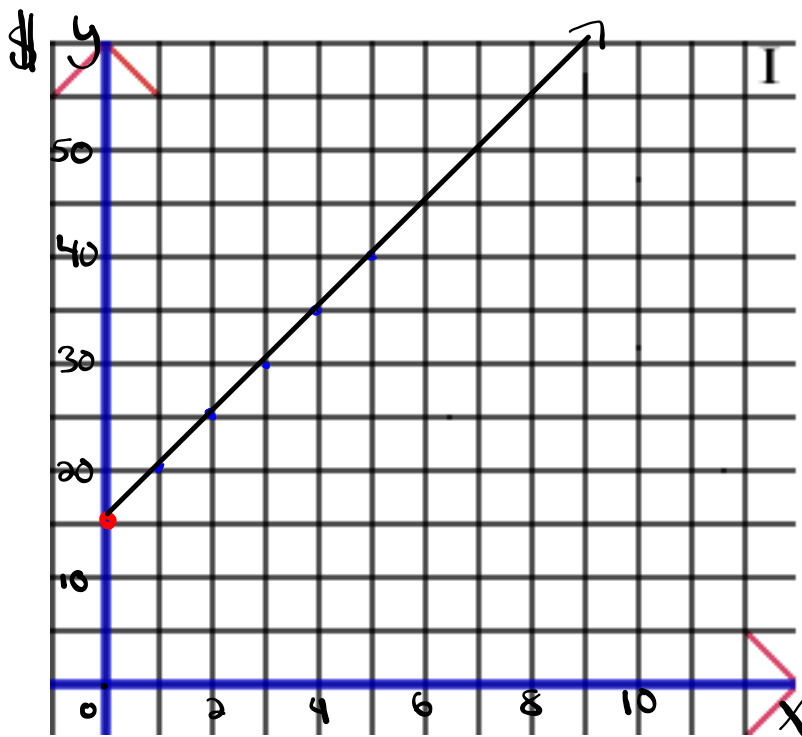
x:	Number of kilometers, Number of hours, Number of pictures, etc....
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y:	Total Cost (\$), Total Earned (\$)
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Laura babysits on the weekend to make extra money. She charges \$15 as a flat rate and then \$5 every hour.

$$b = 15$$

$$m = 5 = \frac{5}{1} \left(\frac{\text{rise}}{\text{run}} \right)$$



$$y = mx + b$$
$$y = 5x + 15$$

of hours

Laura babysits on the weekend to make extra money. She charges \$15 as a flat rate and then \$5 every hour.

$$b = 15$$

$$m = 5$$

a) How much would it cost to have Laura babysit for 3 hours?

$$x = 3$$

$$y = 5x + 15$$

$$y = 5(3) + 15$$

$$y = 15 + 15$$

$$y = \$30.00$$

b) How many hours could you have Laura babysit for if you had \$45?

$$y = 45$$

$$y = 5x + 15$$

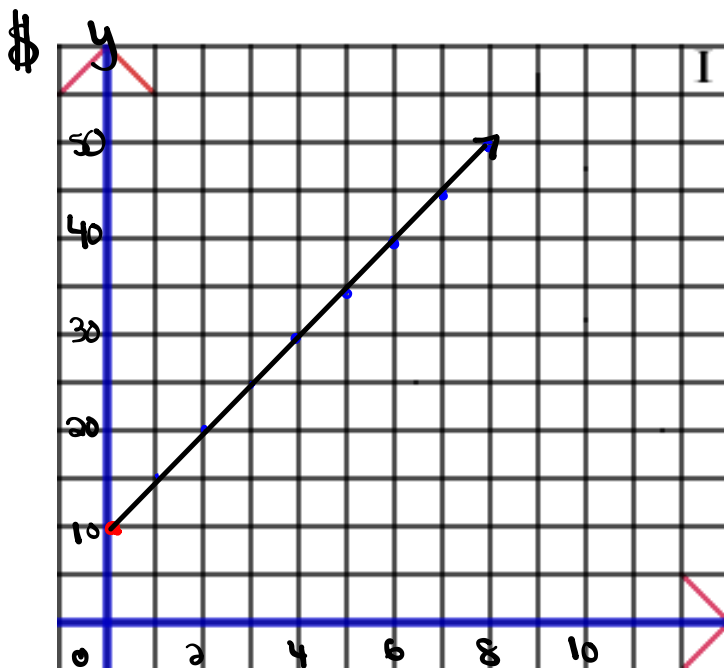
$$45 = 5x + 15$$

$$\frac{30}{5} = \frac{5x}{5}$$

$$6 \text{ hrs} = x$$

A photographer charges a sitting fee of \$10 and \$5 for every photograph ordered.

$$b = 10 \quad m = 5$$



$$y = mx + b$$
$$y = 5x + 10$$

of photos

A photographer charges a sitting fee of \$10 and \$5 for every photograph ordered.

a) How many photographs could you get for \$35? $y = 35$

$$y = 5x + 10$$

$$35 = 5x + 10$$

$$\frac{25}{5} = \frac{5x}{5}$$

$$\boxed{5 \text{ photos} = x}$$

b) How much would it cost for 8 photographs? $x = 8$

$$y = 5x + 10$$

$$y = 5(8) + 10$$

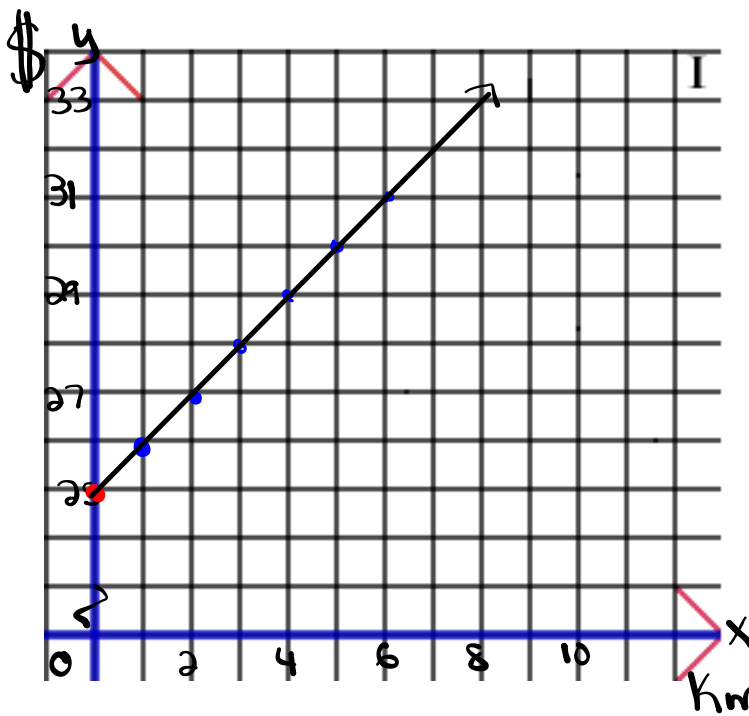
$$y = 40 + 10$$

$$\boxed{y = \$50.00}$$

A taxi driver charges a flat fee of \$25 and then \$1 for every km traveled.

$$b = 25$$

$$m = 1$$



$$y = mx + b$$
$$y = 1x + 25$$

A taxi driver charges a flat fee of \$25 and then \$1 for every km traveled.

$$b = 25$$

$$m = 1$$

a) How far can you travel for \$75? $y = 75$

$$y = x + 25$$

$$75 = x + 25$$

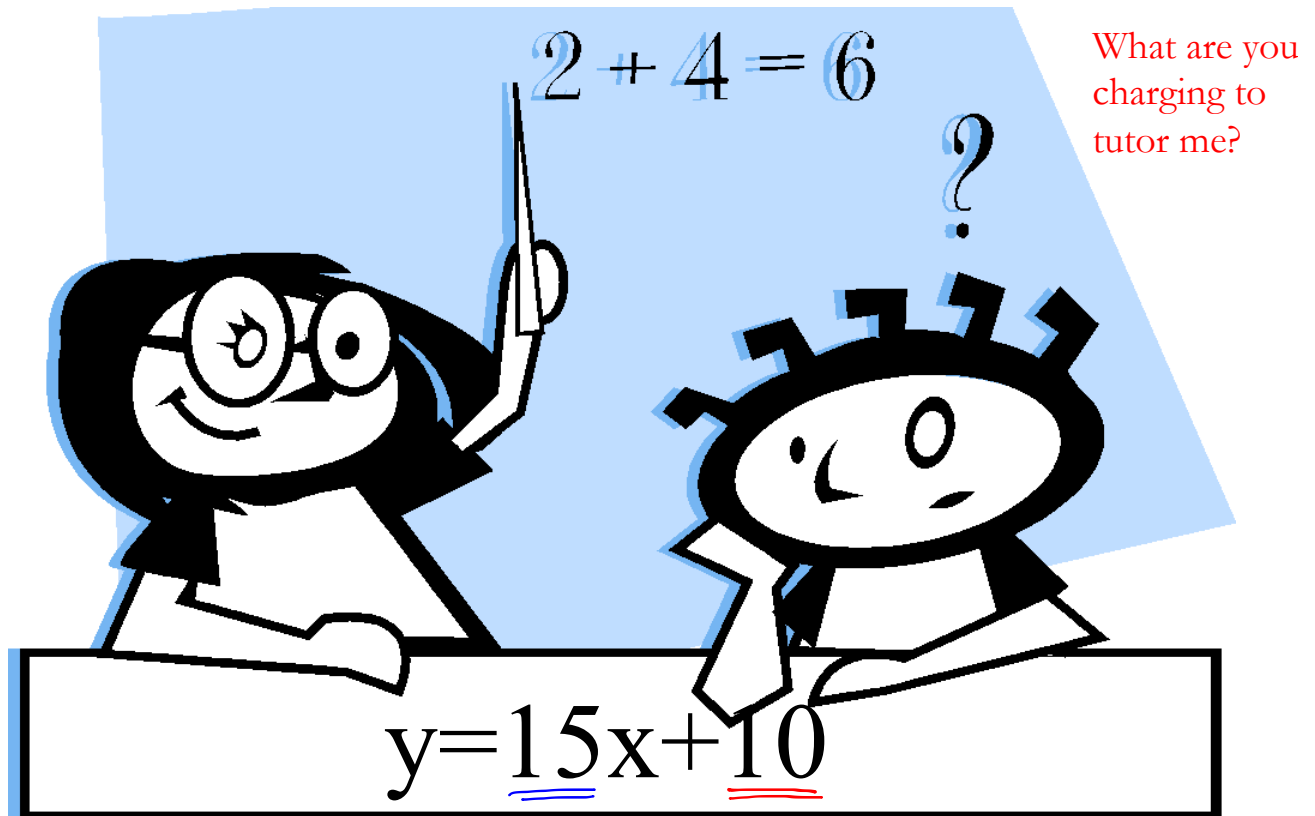
$$\boxed{50 \text{ km} = x}$$

b) How much would it cost to travel 50 km? $x = 50$

$$y = x + 25$$

$$y = 50 + 25$$

$$\boxed{y = \$75.00}$$



Write the scenario that would represent the equation.

$$m = 15$$

$$b = 10$$

They are charging you a flat rate of \$10 plus \$15 for every hour worked.

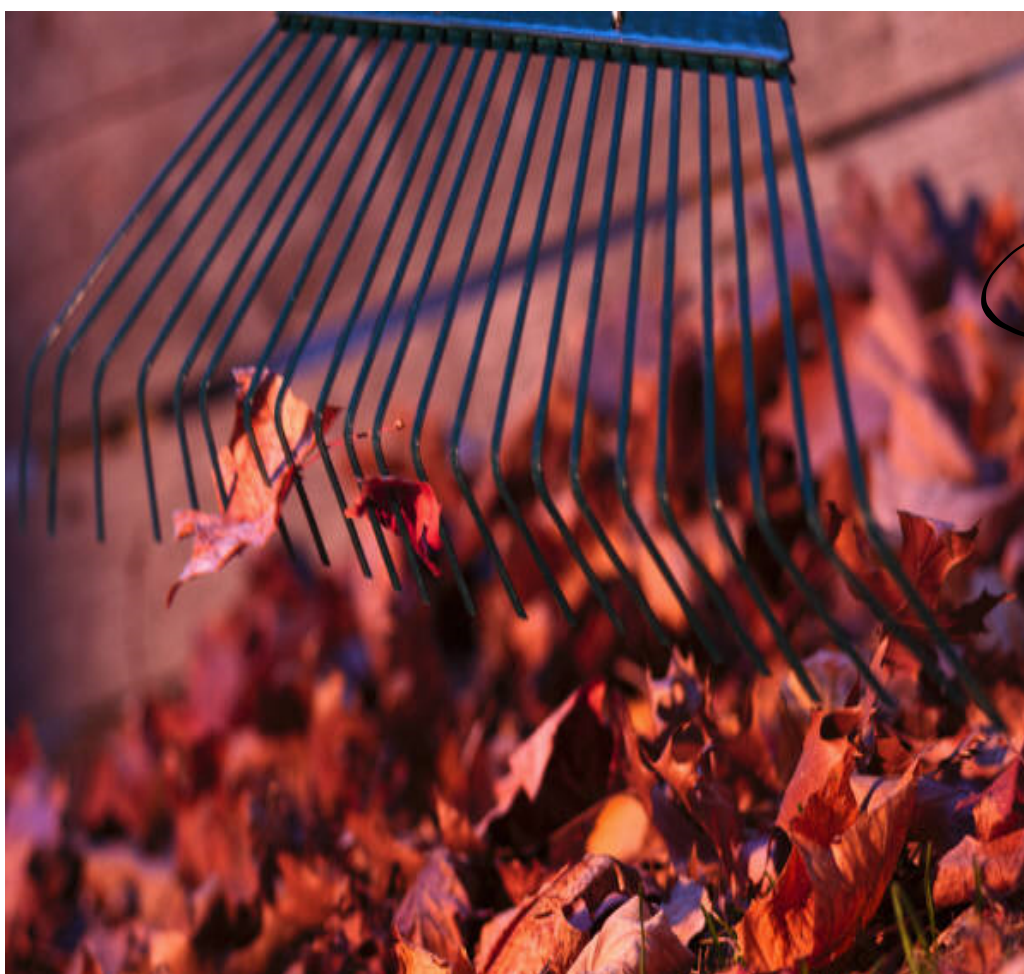
Which of the following equations is a reasonable representation of the cost of raking leaves.

\$50/hr ???

↓
 $y=50x+5$

$y=15x$

↑
\$15/hr



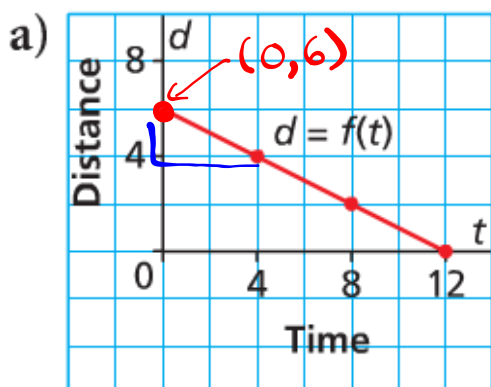
$$y = mx + b$$

m = Rate of Change (Slope)

b = initial amount (vertical intercept or y-int.)

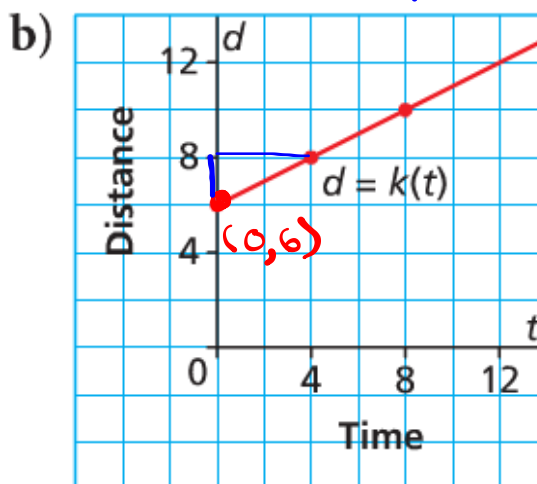
Write the equation for each.

$$b = 6 \quad m = \frac{-2}{4} = -\frac{1}{2}$$



$$y = -\frac{1}{2}x + 6$$

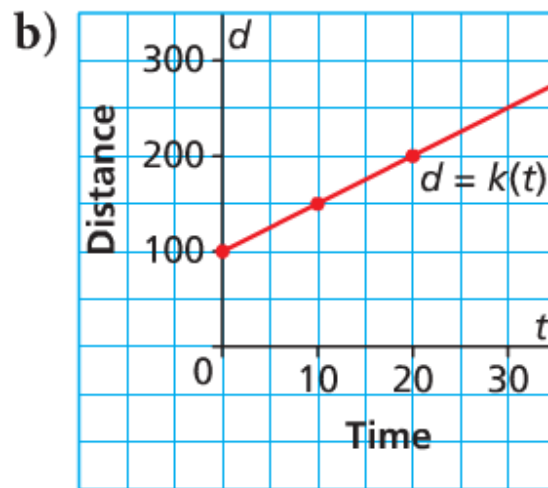
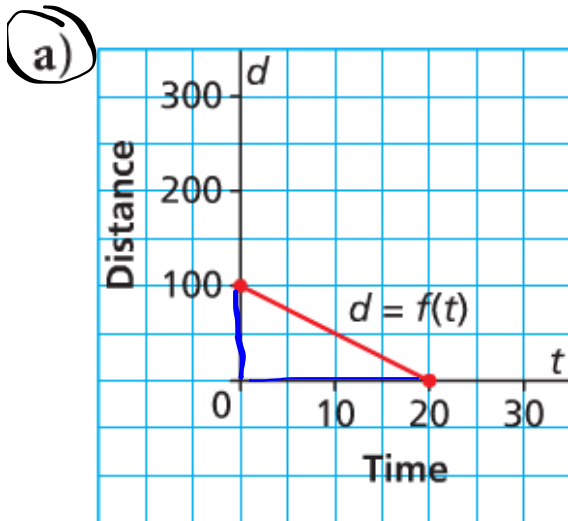
$$b = 6 \quad m = \frac{2}{4} = \frac{1}{2}$$



$$y = \frac{1}{2}x + 6$$

Which graph has a rate of change of -5 and a vertical intercept of 100?

$$m = -5 \quad b = 100$$



$$m = \frac{-100}{20}$$

$$m = -5$$

Homework

Answers:

① $y = 25x + 100$

⑭ $y = 7x + 10$

② $y = 2.5x + 15$

⑮ $y = 11x + 60$

③ $y = 5x + 20$

⑯ $y = 20x + 150$

④ $y = 8x + 10$

⑰ $y = 16x + 30$

⑤ $y = 30x + 100$

⑱ $y = 12x + 20$

⑥ $y = 15x + 20$

⑲ $y = 6x + 40$

⑦ $y = 10x + 45$

⑳ $y = 15x + 23$

⑧ $y = 35x + 150$

㉑ $y = 17x + 200$

⑨ $y = 10x + 40$

㉒ $y = 20x + 30$

⑩ $y = 9x + 14$

㉓ $y = 30x + 60$

⑪ $y = 18x + 75$

a) $y = 11x + 60$

$y = 11(41) + 60$

$y = 451 + 60$

$y = \$511$

⑫ $y = 170x + 800$

⑬ $y = 15x$

b) $y = 35x + 150$

$y = 35(21) + 150$

$y = 735 + 150$

$y = \$885$

c) $y = 20x + 30$

$250 = 20x + 30$

$220 = 20x$

$11 = x$

d) $y = 7x + 10$

$y = 7(35) + 10$

$y = 245 + 10$

$y = \$255$

e) $y = 15x$

$y = 15(19)$

$y = \$285$

$$f) y = 25x + 100$$

$$1000 = 25x + 100$$

$$900 = 25x$$

$$36 = x$$

$$g) y = 12x + 20$$

$$140 = 12x + 20$$

$$120 = 12x$$

$$10 = x$$

$$h) y = 15x + 20$$

$$y = 15(6) + 20$$

$$y = 90 + 20$$

$$y = \$110$$

$$i) y = 10x + 45$$

$$135 = 10x + 45$$

$$90 = 10x$$

$$9 = x$$

$$j) y = 2.5x + 15$$

$$42.50 = 2.5x + 15$$

$$27.50 = 2.5x$$

$$11 = x$$

$$k) y = 10x + 40$$

$$1100 = 10x + 40$$

$$1060 = 10x$$

$$106 = x$$