

# SLOPE-INTERCEPT FORM OF A LINE (FUNCTIONAL FORM)

1. The linear function  $f$  passes through points A (0, 6) and B (6, -3).  $\rightarrow$

What is the rule of this function?

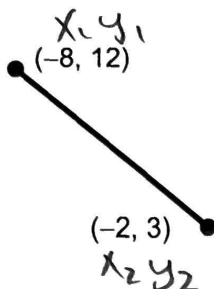
$$a = \frac{-9}{6} = -\frac{3}{2}$$

$$y = -\frac{3}{2}x + b$$

$$6 = -\frac{3}{2}(0) + b$$

$$(b=6) \quad y = -\frac{3}{2}x + 6$$

2. Given the graph:



$$a = \frac{3-12}{-2-(-8)}$$

$$= \frac{-9}{6} = -\frac{3}{2}$$

$$y = -\frac{3}{2}x + b$$

$$3 = -\frac{3}{2}(-2) + b$$

$$b = 0$$

$$y = -\frac{3}{2}x$$

3. A linear function passes through the points (5, 0) and (-10, 3).

What is the rule of the function?

$$a = \frac{3-0}{-10-5} = \frac{3}{-15} = -\frac{1}{5}$$

$$b = y_1 - a(x_1) \quad b = 0 - \frac{1}{5}(5) = -1 \rightarrow y = -\frac{1}{5}x - 1$$

4. Cynthia is emptying a large aquarium tank.

Choose any two nice points.

$$(5, 700)$$

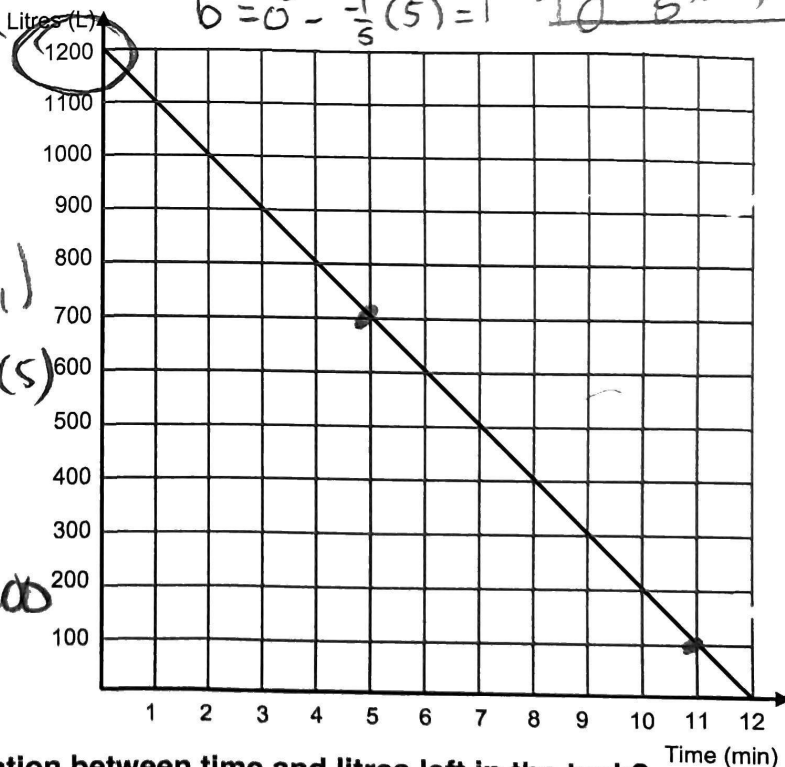
$$(11, 100)$$

$$b = y_1 - a(x_1)$$

$$b = 700 - (-100)(5)$$

$$b = 1200$$

$$y = -100x + 1200$$



$$a = -100$$

What is the rule showing the relation between time and litres left in the tank?

Time (min)

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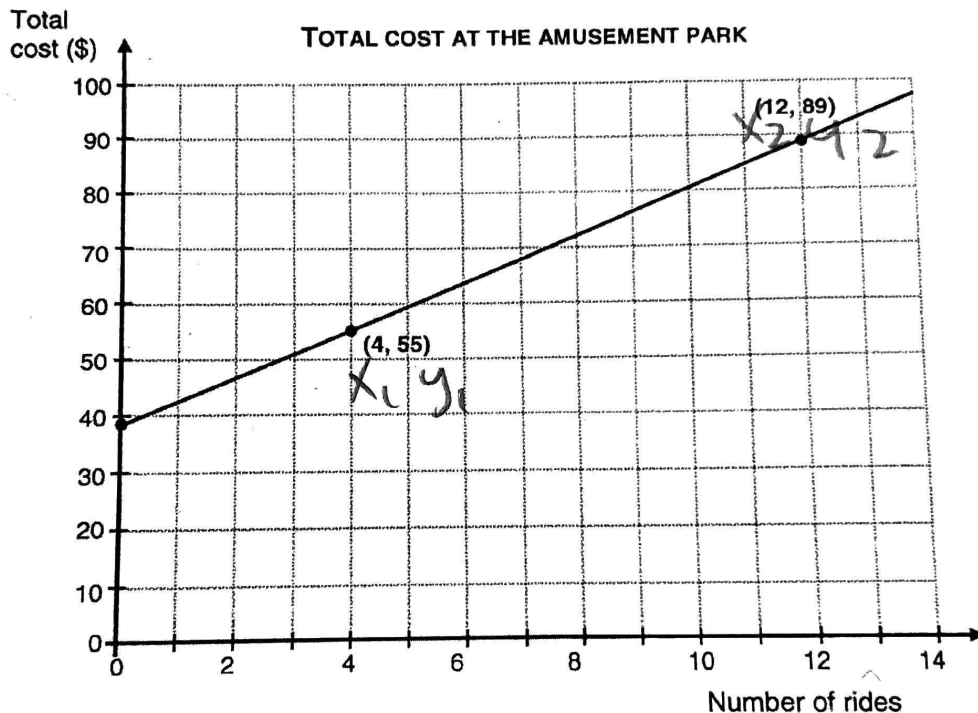
5. A new amusement park offers two different pricing options:

## OPTION A:

The entrance fee is \$26, plus an additional cost per ride. For 10 rides, the total cost is \$83.50.

## OPTION B:

The relationship between the number of rides and the total cost is shown in the graph:



a) What is the cost per ride for Option A?

$\$5.75/\text{Ride}$

b) What is the entrance fee for Option B?

$y = ax + b$  entrance fee  
 $\uparrow$   
 cost per ride

$$a = \frac{89 - 55}{12 - 4} = \frac{34}{8} = 4.25$$

$$b = y_1 - a(x_1) = 55 - 4.25(4) = 38$$

$\$38$