

Warm Up

A video arcade charges an entrance fee plus a fee per game played. Two games cost \$9, 4 games cost \$13, and 5 games cost \$15.

Write an equation finding the total cost to play x number of games.

Label the initial value and the rate of change in the following equation.

$$y = mx + b$$

$$y = b \cdot a^x$$

NOTES:

Exponential Growth: $y = b \cdot a^x$
 $a > 1$

1. The starting balance of Anna's account is \$1,250. She deposits \$30 into her account each month.

Is the rate of change linear or exponential?

What is the rate of change? + 30

What is the starting value? 1250

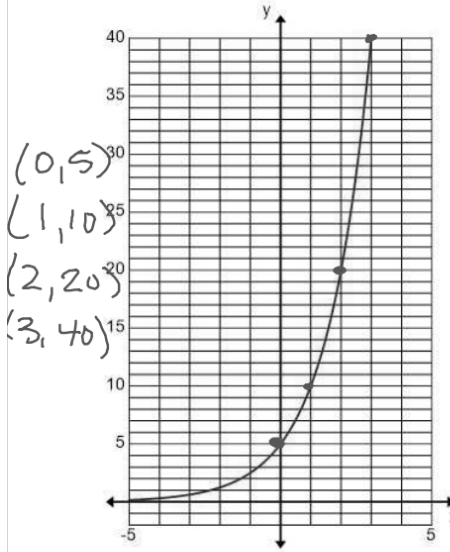
Find an equation to represent the balance in her account at any month.

2. Jocelyn makes phone calls as part of her campaign as candidate for mayor. Of the people who say they will vote for her, she asks them to call additional people in the city to ask for votes. The amount of calls made on days 1, 3, and 4 are 40, 640, and 2560, respectively.

Day	Votes
0	10
1	40
2	160
3	640
4	2560

Is the rate of change linear or exponential? exponential
 What is the rate of change? $\times 4$
 What is the starting value?
 Write an equation to represent the pattern.
 $\frac{2560}{640} = 4$

3. Determine the equation that represents the relationship between x and y in the graph below.



x	y
0	5
1	10
2	20

Is the rate of change linear or exponential?

What is the rate of change?

$$\times 2$$

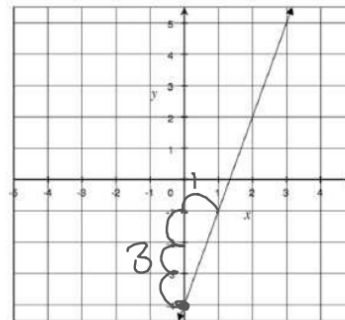
What is the starting value? \leftarrow y-intercept

$$5$$

What is the equation for this graph?

$$y = 5 \cdot 2^x$$

4. Determine the equation that represents the relationship between x and y in the graph below.



$$y = -4 + \frac{3}{1}x$$

$$y = -4 + 3x$$

