

Gary's grandparents opened a new savings account for him when he turned 18 years old. Gary saved the same amount each month and deposited it into this account. After 8 months he had a balance of \$500. If his grandparents gave him \$300 to start the account, how much did he save each month?

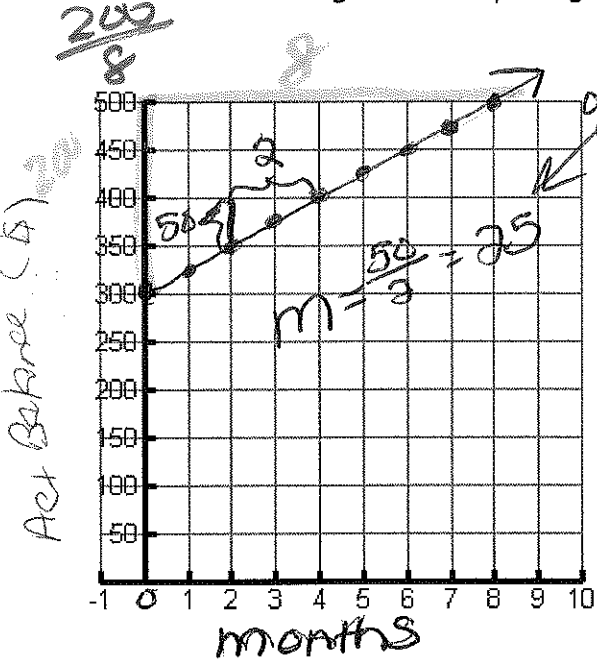
1. Label the independent and dependent variables on the graph and table.
2. Analyze the problem and identify information that is given. (slope, y-intercept and/or a point)

$500 - 300 = 200 \div 8 = 25$

Equation  $m = ?$   $b = 300$   $(0, 300)$

3. Plot the given information on the graph  
Record the given information on the table  
Substitute the variables into the slope-intercept form of the equation.

4. Find the missing variable by using the graph, table, and/or equation.  $m = 25$



x months	y Balance
0	300
1	325
2	350
3	375
4	400
5	425
6	450
7	475
8	500

$y = mx + b$   
 $y = 25(x) + 300$   
 $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{305 - 300}{1 - 0} = \frac{25}{1}$   
 $m = 25$

Equation for this situation  $y = 25x + 300$

5. Write a function rule for the situation.  $f(x) = 25x + 300$

6. Use your function rule to answer the following questions. Show your work.

If Gary continues to save at the same rate, how much will be in the account in 1 year?

$f(x) = 25x + 300$   
 $f(12) = 25(12) + 300$   
 $f(12) = 600$  \$600

If Gary continues to save at the same rate, how much will be in the account in 2 years? Is this situation proportional? (direct variation) Why or why not?

$y = 25x + 300$   
 $y = 25(24) + 300$   
 $y = 900$   
 NO, months  $\frac{12}{600} \neq \frac{24}{900}$   $12(900) = 24(600)$   
 $10800 \neq 14400$   
 because of the \$300 (y-intercept) starting amt.  
 Page 1 of 2  
 cross products are not equal