

Self-Check #14 – Linear & Exp Functions

Linear Formulas: $m = \frac{\text{rise}}{\text{run}} = \frac{y - y_1}{x - x_1}$

$y - y_1 = m(x - x_1)$

$f(x) = mx + b$

Exponential Formulas: $f(x) = a \cdot b^x$

$f(t) = P(1+r)^t$

$f(t) = P(1-r)^t$

Determine the multiplier for each growth rate or decay rate.

1) 25% growth

2) doubling

3) 6% decay

4) 0.2% growth

1.	_____
2.	_____
3.	_____
4.	_____

Decide if the situation represents a linear increasing, linear decreasing, an exponential growth, or an exponential decay function. Then write the equation that represents the situation. Use the equation to answer the question.

5) You are walking in the park and notice that each day you see two more squirrels than the day before. If there was only 3 squirrels on the first day that you walked in the park, how many would there be after eight more days in the park?

6) Jason was counting the number of bacteria cells in science class. On the first day of class there were only 5 cells. Each day after that he noticed that the number of cells doubled. How many cells were there on the 4 day?

7) The first day you played the game Mathquest on your computers, you managed to score 52 points. If you set a goal to increase your score by eight points every time you play the game, how many points would you have after playing it 100 times?

Ex:	$\frac{f(x) = 3(2)^x}{\text{Exp Growth}}$ $\frac{f(3) = 24}{}$
5:	_____ _____ _____
6:	_____ _____ _____
7:	_____ _____ _____

8) You got a baseball card from your uncle and he said it was worth \$50. If it appreciates at a rate of 16% per year, what would be the value after 5 years?

8:

9) You bought your friends too many presents for Christmas and now owe your mom and dad \$180. You plan on paying them \$25 a month until it is paid off. How much money will you still owe them after 5 months?

9:

10) On the day of the Super Bowl, there were 700,000 Seahawks fans. The number of Seahawks fans is decreases by 25% each month. How many Seahawks fans are there in a year?

10:
