

NAME _____ **DATE** _____ **PER.** _____

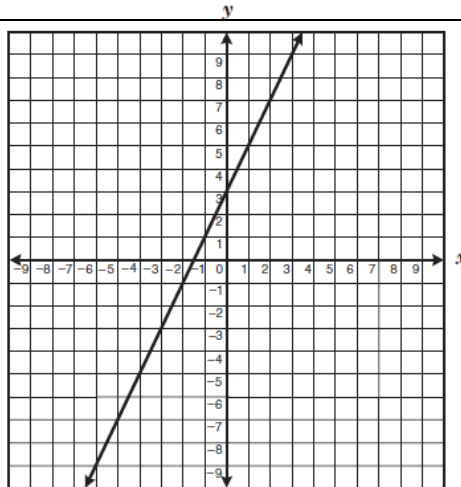
EXPONENTIAL GROWTH & DECAY

Complete the following.

1. The Greens bought a condominium for \$83,000. Assuming that its value will appreciate 6% per year, how much will the condo be worth in five years when the Greens are ready to move?
2. Carl Gossell is a machinist. He bought some new machinery for \$125,000. He wants to calculate the value of the machinery over the next 10 years for tax purposes. If the machinery depreciates at 15% per year, what is the value of the machinery at the end of 10 years?
3. Kyle has saved \$500 of the money he earned working at Carousel Music. If he spends 10% of the money each week, how much money will he have at the end of 50 weeks?
4. The "Mendelssohn" Stradivarius violin was estimated to be worth approximately \$1,700,000 in 1990. The violin is expected to increase in value by approximately 7.5% each year. Estimate the value of the violin in the year 2010.
5. The population of the small town of Meadowbrook was at 8,900 in 2010. It has slowly been decreasing at a rate of 1.5% per year. Predict what the population will be in 2030? Round to the nearest person.

6. The area of a rectangular room is given by the equation $L^2 - 12L = 45$, where L is the length of the room. Find the length.

7. The graph of a line is shown below.



If the slope of this line is multiplied by -1 and the y-intercept decreases by 2 units, which linear equation represents these changes.

F. $y = -2x + 1$

H. $y = -x - 1$

G. $y = -x + 1$

J. $y = -\frac{1}{2}x - 1$

8. Which ordered pair represents one of the roots of the function $f(x) = 2x^2 + 3x - 20$?

A. $\left(-\frac{5}{2}, 0\right)$

B. $(-4, 0)$

C. $(-5, 0)$

D. $(-20, 0)$