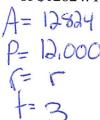


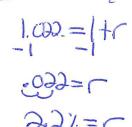
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Date \_\_\_\_\_Algebra II

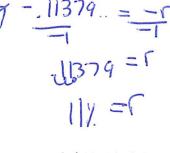
## Finding Exponential Rate

1. A bank account opened up 3 years ago with an initial balance of \$12000 now has a balance of \$12824. Find the annual growth rate, to the *nearest tenth of a percent*.

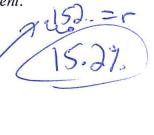




2. Jack bought a new car in 2010 for \$16100. In 2018, the car is now worth \$6125. What is the annual rate of decrease to the *nearest percent*?



3. A collectible toy was bought 15 years ago for \$5 and is now worth \$42. Find the annual growth rate to the *nearest tenth of a percent*.



4. A colony of 120 timberwolves increased to 245 over a 6 year span. Assuming exponential growth, what was the annual growth rate to the *nearest percent*?

$$\frac{345}{120} = \frac{120(1+7)}{126...} = \frac{1+7}{1.126...}$$

A	136	 ~
	13%	

5. The principal value of a loan is \$424,100. If there is \$110,000 remaining on the loan after 19 years, what was the annual rate of decrease to the *nearest tenth of a percent*?

$$A = 110,000 = 434,100(1-r)^{19} - .06856 = -r$$

$$P = 434,100 = 434,100 = 434,100 = -1$$

$$r = r$$

$$19,359 = 19(1-r)$$

$$-1 = r$$

$$-19 = -1$$

$$-19 = r$$

6. An endangered species has dropped from 937 animals to 375 animals over the past 8 years. What is the annual rate of decrease rounded to the *nearest percent*?

$$A = 375$$

$$P = 937$$

$$(= 7) + 9002 = 10816 = 7$$

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7. A house purchased 5 years ago for \$100,000 was just sold for \$135,000. Assuming exponential growth, approximate the annual growth rate, to the *nearest percent*.

$$A = 135,000 = 100,000(1+r)^{5}$$

$$A = 100,000 = 100,000(1+r)$$

$$A = 100,0$$

8. Over the past 4 years, the value of a stock increased from \$1200 to \$2300. What is the *monthly* growth rate, rounded to the *nearest tenth of a percent*?

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