Algebra 1

Bellwork

Thursday, April 7, 2016

- 1. Use each percent change to find the base of an exponential equation.
- a) 19.8% increase. b =

- b) 7.043% decrease. b =
- 2. State the percent change each exponential equation represents and whether it's an increase or a decrease.
- a)  $y = 418(0.6075)^x$

b)  $y = 9000(1.4302)^x$ 

% change =

% change =

inc or dec?

inc or dec?

3. Does each exponential equation represent Growth or Decay?

a) 
$$y = 10,000(0.9937)^x$$

b) 
$$y = 23 \left(\frac{42}{39}\right)^{-x}$$

c) 
$$y = 757(1.3000042)^x$$

- 4. The value of a business as been decreasing 2.9% each year. The value in 2009 was \$2,500,000.
- a) Find the value of the business in 2016.

b) Find the value of the business in 2000.

5. When a couple's first child is born they invest \$10,000 in an account that pays 8% interest annually. How much will be in the account when the child turns 18 years old?

## Algebra 1

Bellwork

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Answers

- 1. Use each percent change to find the base of an exponential equation.
- a) 19.8% inccrease. b = 1.198

- b) 30.43% increase. b = 0.92957.043 % decrease 100-7.043 = 92.9571
- 2. State the percent change each exponential equation represents and whether it's an increase or a decrease.

a) 
$$y = 418(0.6075)^x$$

b) 
$$y = 9000(1.4302)^x$$

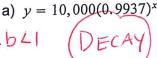
inc or dec?

% change = 
$$43.02\%$$

DEC

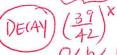
$$\frac{-100}{-39.25}$$

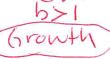
3. Does each exponential equation represent Growth or Decay?



b) 
$$y = 23 \left( \frac{42}{39} \right)$$

c) 
$$y = 757(1.3000042)^x$$





- 4. The value of a business as been decreasing 2.9% each year. The value in 2009 was \$2,500,000.
- a) Find the value of the business in 2016.

base: 
$$b = .971$$
 $X = 2.500,000(.971)$ 
 $X = 2.016 - 2.009 = 7$ 

$$X = 2016 - 2009 = -$$

b) Find the value of the business in 2000.

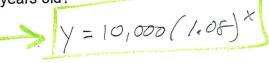
$$X = 2000 - 2009 = -9$$

$$Y = 2,500,000(.971) - 9$$

$$43,258,118,98$$

5. When a couples first child is born they invest \$10,000 in an account that pays 8% interest annually. How much will be in the account when the child turns 18 years old?

base: 100+8= 108%) 6=1.08



Y=10,000 (1.08) 18 \$ 39,960.19