Bellwork Monday, May 5, 2014

1. Simplify. Write your answer so that no exponents are negative or zero. Leave fractional answers in reduced form.

a) $(5h^4j^3k^0)^2(2h^{-6}j^4)^4$

$(25h^{8}j^{6})(16h^{-24}j^{16})$

$400h^{-160}$

$\frac{400}{h^{160}}$

b) $\left(\frac{4a^4b^{-2}c^7}{6a^{-2}b^{-9}c^{10}}\right)^{-3}$

$\frac{2a^6b^7}{3c^3}$

$\frac{2^{-3}a^{-18}b^{-21}}{3^{-3}c^{-9}} \quad \frac{3^3c^9}{2^3a^{18}b^{21}} \quad \frac{27c^9}{8a^{18}b^{21}}$

2. Given the percent change find the growth or decay factor (b) that would be used in an exponential equation.

a) 30.2% increase b = $100+30.2 = 130.2$ 1.302

b) 80.7% decrease b = $100-80.7 = 19.3$ 0.193

3. Given the following exponential equations find the % change it represents and tell if it's an increase or a decrease.

a) $y = 4800\ (0.9912)^x$

$\times 100$

99.12

-100

$-.88$

0.88% dec

b) $y = 0.875\ (1.701)^x$

$\times 100$

170.1

-100

70.1

c) $y = 52\ (2)^x$

200% − 100% → 100%

4. The value of an investment in 2006 was $95,000.
The investment has been decreasing 1.05% each year.

$b = .9895$ $\quad 100 - 1.05 = 98.95$

a) What was the value of the investment in 2010?

$y = 95{,}000(.9895)^4 = \$91{,}072.40$

b) What was the value of the investment in 2000?

$y = 95{,}000(.9895)^{-6} = \$101{,}211.26$

5. Match each equation to its graph.

__D__ a) $y = 3(2.5)^x$ __B__ b) $y = 5(0.4)^x$ __C__ c) $y = 3(6)^x$

__A__ d) $5(0.82)^x$ __E__ e) $y = (2.5)^x$