

Exponential Growth and Decay Practice Worksheet

Name:

Watch the YouTube Video Practice on Exponential Growth/Decay

Copy down and take notes on both exponential growth/decay word problems...

1) Example 1: Exponential Decay

2) Example 2: Exponential Growth

Complete the following practice problems:

1) Determine if the following exponential functions represent a growth or decay situation.

a) $y = 5(2)^x$

b) $y = 100(.5)^x$

c) $y = 80(1.3)^x$

d) $y = 20(0.8)^x$

e) $y = 20(1 + 0.025)^x$

f) $y = 40(1 - 0.4)^x$

2) Since 1980, the population of the city of Brownville has grown according to the mathematical model $y = 720,500(1.022)^x$, where x is the number of years since 1980.

a) Explain what the values 720,500 and 1.022 represent in this model.

b) What would the population be in 2000 if the growth continues at the same rate?

c) What was the population of Brownville in 1975? (**Hint: you are finding the population before 1980**)

3) A population of 800 beetles is growing each month at a rate of 5%.

a) Write an equation that expresses the number of beetles at time x .

b) About how many beetles will there be in 8 months?

4) Your new computer cost \$1500 but it depreciates in value by about 18% each year.

a) Write an equation that would indicate the value of the computer at x years.

b) How much will your computer be worth in 6 years?