Review

1) A flu outbreak hits your school on Monday, with an initial number of 20 ill students coming to school. The number of ill students increases by 25% per hour.

a) Is this an example of exponential growth or decay?

b) Write an exponential function to model this Monday flu outbreak.

c) How many students will be ill after 6 hours?

2) A new sports car sells for $35,000. The value of the car decreases by 18% annually. Which of the following choices models the yearly value of the car since its purchase?

a) $y = 35000(1.18)^x$ b) $y = 35000(.82)^x$ c) $y = 35000(.18)^x$ d) $y = 35000(-0.18)^x$

3) $y = 1200 \cdot (1 + 0.3)^t$

A. Does this function represent exponential growth or exponential decay?

B. What is your initial value?

C. What is the rate of growth or rate of decay?

4.) $y = 5575 \cdot (0.65)^t$

A. Does this function represent exponential growth or exponential decay?

B. What is your initial value?

C. What is the rate of growth or rate of decay?

5) The first year of a charity walk event had an attendance of 500. The attendance y increases by 5% each year.

A. Write an exponential growth function to represent this situation.

B. How many people will attend in the 10th year? Round your answer to the nearest person.

6) A piece of land was purchased for $65,000. The value of the land has slowly been decreasing by 1% annually.

A. Write an exponential decay function to represent this situation.

B. How much will the land be worth in 20 years? Round your answer to the nearest dollar.

7) The yearly profits of a company is $25,000. The profits have been decreasing by 6% per year.

A. Write an exponential decay function to represent this situation.

B. What will be the profits in 8 years? Round your answer to the nearest dollar.

8) Do the following represent growth or decay?

a) $y = 200(4)^{-x}$

b) $y = 3.05(.87)^{x}$

$$f(x) = 4 \cdot \left(\frac{1}{2}\right)^{x-1}$$

9) Sketch the graph of the function. Identify as either a growth or decay function.