
Show all work to receive full credit. No Work = No Credit.

1. Fill in the blank with the appropriate word:

(a) The function $f(x) = 3(.99)^x$ is an example of exponential decay.

(b) The function $f(x) = \left(\frac{3}{2}\right)^x$ is an example of exponential growth.

2. If $f(x) = a^x$ and $f(-4) = 16$, what is a ?

$$16 = a^{-4}$$

$$16 = \frac{1}{a^4}$$

$$\frac{1}{16} = a^4$$

$$a = \frac{1}{2}$$

3. If \$3200 is invested for x years at 8% interest, compounded quarterly, the interest earned is

$$I = 3200(1.02)^{4x} - 3200.$$

What interest is earned in 5 years?

$$I = 3200(1.02)^{4 \cdot 5} - 3200 = 3200(1.02)^{20} - 3200 = \$1555.03$$