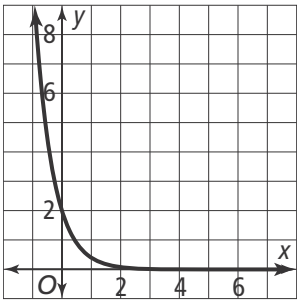
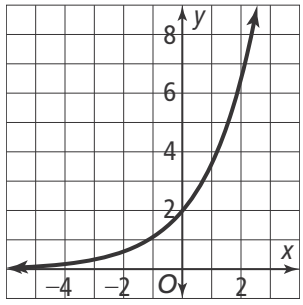
Name _____

6-3 Reteach to Build Understanding

Exponential Growth and Decay

1. Label each graph by writing *exponential growth* or *exponential decay* in the blank.





_____ _____

$f(x) = a(1 + r)^x$, where $r > 0$ _____

$f(x) = a(1 - r)^x$, where $r > 0$ _____

2. Complete the steps for finding the value of a car after 5 years of depreciation.

Initial value of a car: $15,000 Decay factor: 12% per year Time: 5 years

$f(x) = a(1 - r)^x$ Write the function to model exponential decay.

$f(x) =$ _____ $(1 -$ _____$)^{-}$ Substitute values for a, r, and x.

$f(x) =$ _____ Simplify.

The value of a $15,000 car after 5 years would be around _____.

3. Hannah invested $4,000 in a savings account that earned 2% interest compounded quarterly. She determined that if she does not withdraw or deposit any more money, the value of the account at the end of 3 years will be $4,244.83. What error did Hannah make in her calculations? What will the account balance be after 3 years? Explain.