

Practice 16

FOR USE WITH SECTION 3.3

For each function in Exercises 1–6, do the following:

- Find the y -intercept of the graph.
- Tell whether the graph represents exponential growth, exponential decay, or neither.
- Sketch the graph.

1. $y = 160(0.85)^x$ 2. $y = -2.5(1.14)^x$ 3. $y = -370(0.6)^x$

4. $y = 18.4(1.08)^x$ 5. $y = 3.8(0.75)^x$ 6. $y = -145(1.6)^x$

- Sketch the graph of $y = 2.8(1.1)^x$.
 - On the same axes sketch the reflection of the graph in part (a) over the y -axis and give the equation of the reflected graph.
 - On the same axes sketch the reflection of your original graph over the x -axis and give the equation of the reflected graph.
- A certain arthritis medication is eliminated from the bloodstream at the rate of about 20% per hour in adults. The original dosage of the medication is 40 mg.
 - Write an equation of the form $y = ab^x$ for the amount of the medication that remains in the bloodstream after x hours.
 - How many hours will it take for half the medication to be eliminated?
 - Write an equation of the form $y = a \cdot \left(\frac{1}{2}\right)^{x/h}$ for the amount remaining after x hours.
- \$1500 is invested in a bank at 2.5% interest, compounded annually.
 - Write an equation of the form $y = ab^x$ for the amount in the account after x years.
 - How many years will it take for the original amount to double?
 - Write an equation of the form $y = a \cdot (2)^{x/d}$ for the amount of money in the account after x years.
- Find the doubling time of money in a bank account offering interest compounded annually at each rate. Round each doubling time to the nearest whole number of years.
 - 7%
 - 10%
 - 2%
 - 14%