Assessment

## Pre-Assessment

Circle the letter of the best answer.

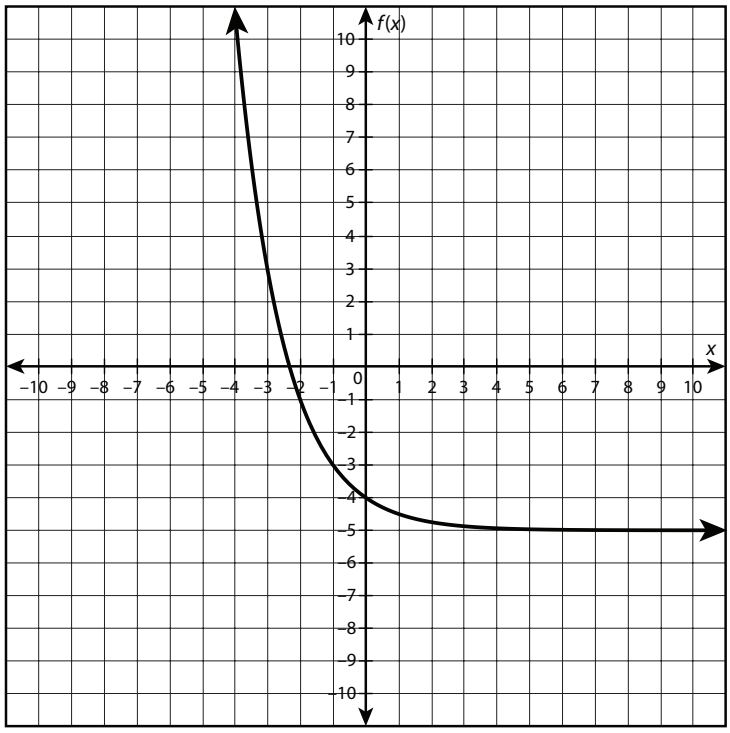
1. The domain of $f(x) = 2^x - 7$ is {0, 1, 2, 3}. What is the range of $f(x)$?

   a. {–7, –5, –3, –1}
   c. {7, 9, 11, 13}
   b. {–6, –5, –3, 1}
   d. {–1, 3, 5, 6}

2. The domain of $g(x) = 12 \cdot 2^x - 1$ is all real numbers. What is the range of $g(x)$?

   a. $x > -1$
   c. $x < -1$
   b. $x > 12$
   d. $x < 12$

3. What are the domain and range of the graphed function?




   a. Domain: {$x > -5$}; range: {$f(x) > -5$}
   b. Domain: {$x > -5$}; range: {all real numbers}
   c. Domain: {all real numbers}; range: {$f(x) > -5$}
   d. Domain: {all real numbers}; range: {$f(x) < -5$}

continued

## Assessment

4. An investment promises a return of 12% per year. Kayla wants to figure out how much money she will have if she invests $1,500 for 1, 5, or 10 years. The investment's growth can be modeled using the exponential function $f(x) = 1500 \cdot 1.12^x$, where $x$ represents the number of years and $f(x)$ represents the return on the investment. What are the domain and range of the function in this situation? (*Note*: Because the range is in dollars, round your answers to two decimal points.)

   a. Domain: {1, 5, 10}; range: {1500, 2643.51, 4658.77}

   b. Domain: {1, 5, 10}; range: {1680, 2643.51, 4658.77}

   c. Domain: {1, 5, 10}; range: {1680, 8400, 16,800}

   d. Domain: {1, 5, 10}; range: {1500, 1680, 2643.51}

5. There are 16 teams in a volleyball tournament. After each round, half the teams are eliminated. This situation can be represented by the function $f(x)=16\left(\frac{1}{2}\right)^x$. What are the domain and range of the function in this situation?

   a. Domain: {0, 1, 2, 3, 4}; range: {16, 8, 4, 2, 1}

   b. Domain: {0, 1, 2, 3, 4}; range: {8, 4, 2, 1, 0}

   c. Domain: {1, 2, 3, 4, 5}; range: {8, 4, 2, 1, 0.5}

   d. Domain: {1, 2, 3, 4, 5}; range: {16, 8, 4, 2, 1}