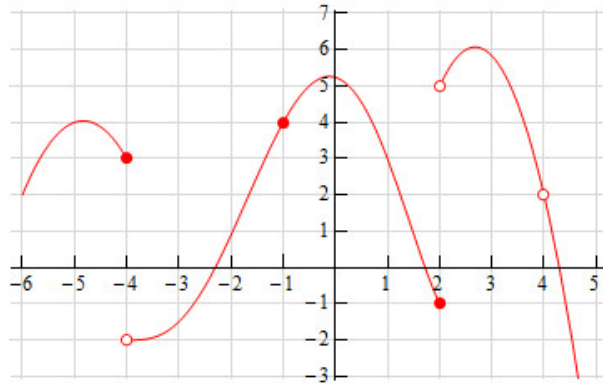


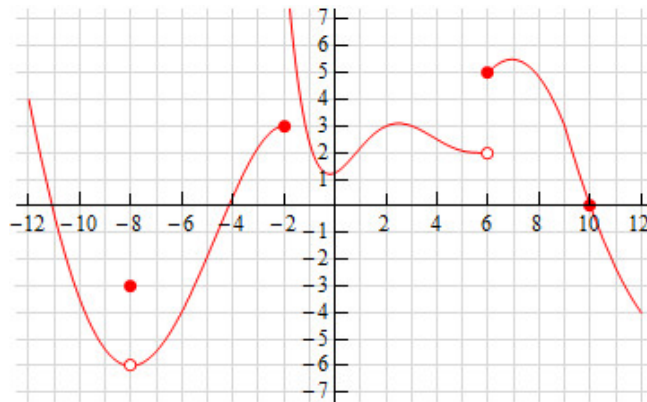
Continuity Practice

Problem 1. For the functions below determine where they are discontinuous.

- a) The graph of $f(x)$ is given below. Based on this graph determine where the function is discontinuous.



- b) The graph of $f(x)$ is given below. Based on this graph determine where the function is discontinuous.



Problem 2. Use the properties of limits and the definition of continuity to determine if the given function is continuous or discontinuous at the indicated points.

1. $f(x) = \frac{4x + 5}{9 - 3x}$

• $x = -1$

• $x = 0$

• $x = 3$

2. $g(z) = \frac{6}{z^2 - 3z - 10}$

• $z = -2$

• $z = 0$

• $z = 5$

3. $g(x) = \begin{cases} 2x & x < 6 \\ x - 1 & x \geq 6 \end{cases}$

• $x = 4$

• $x = 6$

4. $h(t) = \begin{cases} t^2 & t < -2 \\ t + 6 & t \geq -2 \end{cases}$

• $t = -2$

• $t = 10$

Problem 3. For the following determine where the given function is discontinuous.

1. $f(x) = \frac{x^2 - 9}{3x^2 + 2x - 8}$

4. $y(x) = \frac{x}{7 - e^{2x+3}}$

2. $R(t) = \frac{8t}{t^2 - 9t - 1}$

5. $g(x) = \tan(2x)$

3. $h(z) = \frac{1}{2 - 4 \cos(3z)}$

6. $T(x) = \cot(x)$