Continuity

1. Determine whether the function is continuous on the entire real line (similar to p.67 #1-10)

$$f(x) = (x^3 - 2)^5$$

2. Determine whether the function is continuous on the entire real line (similar to p.67 #1-10)

$$f(x) = \frac{8}{x^2 - 1}$$

3. Determine whether the function is continuous on the entire real line (similar to p.67 #1-10)

$$f(x) = \frac{2x}{x^2 + 5}$$

4. Describe the interval(s) on which the function is continuous. If the function has a discontinuity, identify the conditions of continuity that are not satisfied. (similar to p.67 #11-40)

$$f(x) = \frac{5}{x^2 - 9}$$

5. Describe the interval(s) on which the function is continuous. If the function has a discontinuity, identify the conditions of continuity that are not satisfied. (similar to p.67 #11-40)

$$f(x) = x^3 - x^2 + 2$$

6. Describe the interval(s) on which the function is continuous. If the function has a discontinuity, identify the conditions of continuity that are not satisfied.
(similar to p.67 #11-40)

$$f(x)=\frac{x-4}{x^2-6x+8}$$

7. Describe the interval(s) on which the function is continuous. If the function has a discontinuity, identify the conditions of continuity that are not satisfied.
(similar to p.67 #11-40)

$$f(x)=\begin{cases}8x-1, x\le 2\\ 3x+9, x>2\end{cases}$$

8. Describe the interval(s) on which the function is continuous. If the function has a discontinuity, identify the conditions of continuity that are not satisfied.
(similar to p.67 #11-40)

$$f(x)=\begin{cases}9x-1, x\le 3\\ x^2-2, x>3\end{cases}$$

9. Describe the interval(s) on which the function is continuous. If the function has a discontinuity, identify the conditions of continuity that are not satisfied.
(similar to p.67 #11-40)

$$f(x)=x\sqrt{x-2}$$

10. Discuss the continuity of the function on the closed interval. If there are any discontinuities, determine whether they are removable
(similar to p.68 #47-50)

$$f(x)=\frac{x}{x-3},[1,8]$$

11. Discuss the continuity of the function on the closed interval. If there are any discontinuities, determine whether they are removable
(similar to p.68 #47-50)

$$f(x)=\frac{x+1}{x^2+10x+9},[-10,0]$$

12. Sketch the graph of the function and describe the interval(s) on which the function is continuous
(similar to p.68 #41-46)

$$f(x) = \frac{7x^2 - x}{x - 3}$$

13. Sketch the graph of the function and describe the interval(s) on which the function is continuous
(similar to p.68 #41-46)

$$f(x) = \begin{cases} x^2 + 1, x \le 0 \\ 3x + 2, x > 0 \end{cases}$$