

Infinite and Removable Discontinuities

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Determine if each function is continuous. If the function is not continuous, find the x -axis location of each discontinuity and classify each discontinuity as infinite or removable.

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

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

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

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

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

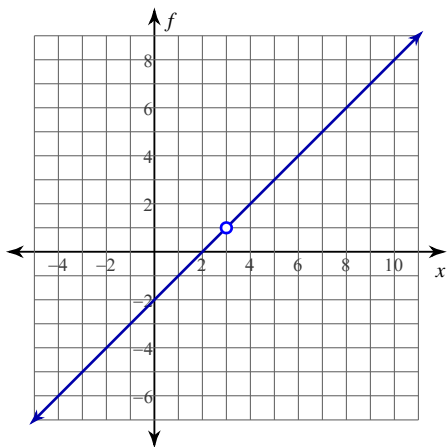
6) $f(x) = \frac{x^2+5x+4}{x+1}$

7) $f(x) = \frac{x-4}{\sqrt{x+2}}$

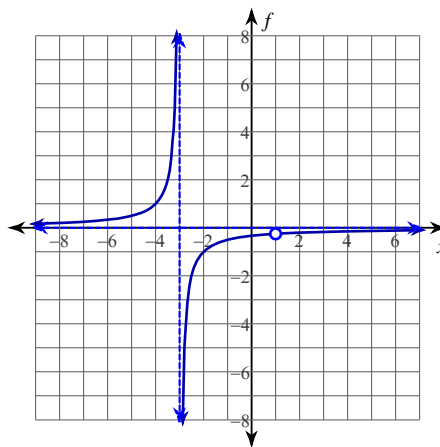
8) $f(x) = \frac{x-2}{x^3-4x}$

Determine if each function is continuous. If the function is not continuous, find the x -axis location of any discontinuities and classify each discontinuity as infinite or removable.

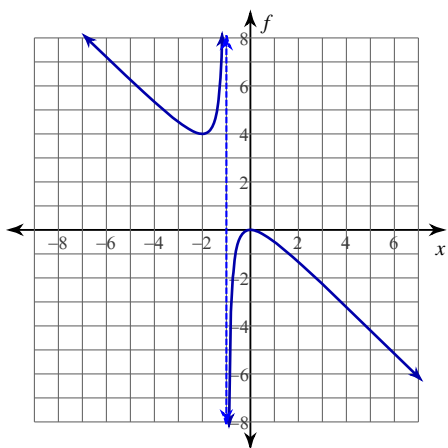
9) $f(x) = \frac{x^2 - 5x + 6}{x - 3}$



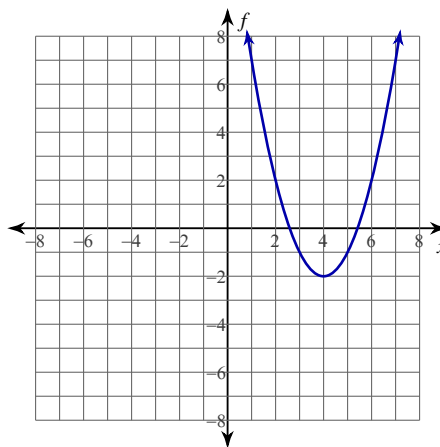
10) $f(x) = -\frac{x - 1}{x^2 + 2x - 3}$



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



12) $f(x) = x^2 - 8x + 14$



Answers to Infinite and Removable Discontinuities (ID: 1)

- 1) Infinite discontinuities at: $x = -1, x = 2$
- 2) Infinite discontinuity at: $x = -1$
- 3) Removable discontinuity at: $x = -2$
- 4) Removable discontinuity at: $x = 0$
Infinite discontinuity at: $x = 3$
- 5) Continuous
- 6) Removable discontinuity at: $x = -1$
- 7) Removable discontinuity at: $x = 4$
- 8) Removable discontinuity at: $x = 2$
Infinite discontinuities at: $x = -2, x = 0$
- 9) Removable discontinuity at: $x = 3$
- 10) Removable discontinuity at: $x = 1$
Infinite discontinuity at: $x = -3$
- 11) Infinite discontinuity at: $x = -1$
- 12) Continuous