

Classifying Discontinuities

Directions: Use limits to find and classify the discontinuities of each of the following functions.

1. $f(x) = \frac{x^2 - 5x + 6}{x^2 - 7x + 10}$

2. $f(x) = \frac{1 - \cos x}{x(3 - x)}$

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

4. $f(x) = \begin{cases} x+3 & \text{if } x < -2 \\ x^2+1 & \text{if } -2 \leq x \leq 0 \\ x+1 & \text{if } x > 0 \end{cases}$

5. $f(x) = \begin{cases} \frac{1}{x} & \text{if } x < 0 \\ \ln(x) - 4 & \text{if } 0 < x < 1 \\ x^3 & \text{if } x \geq 1 \end{cases}$