

Calculus I
Section 2.7 – Continuity

Find any points of discontinuity.

1. $y = \frac{x+1}{x^2 - 4x + 3}$

2. $y = \frac{1}{x-2} - 3x$

3. $y = |x-1| + \sin x$

4. $y = \frac{\cos x}{x}$

5. $y = \frac{x}{x^2 + 1}$

6. $y = \frac{1}{(x+2)^2} + 4$

7. $y = \frac{x+3}{x^2 - 3x + 10}$

8. $y = \frac{1}{|x|+1} - \frac{x^2}{2}$

9. $f(x) = \begin{cases} \frac{x^2 - 1}{x - 1} & x \neq 1 \\ 2 & x = 1 \end{cases}$

Find the value of a that makes the functions continuous.

10. $f(x) = \begin{cases} \frac{x^2 - 1}{x + 1} & x \neq -1 \\ a & x = -1 \end{cases}$

11. $f(x) = \begin{cases} \frac{x^2 + 3x - 10}{x - 2} & x \neq 2 \\ \frac{1}{2}a + 3 & x = 2 \end{cases}$

12. $f(x) = \begin{cases} \frac{x^3 - 3x^2}{x - 3} & x \neq 3 \\ 4 - a & x = 3 \end{cases}$