

1.13 Removing Discontinuities

Calculus

Name: _____

CA #1

1. If the function f is continuous for all real numbers and if $f(x) = \frac{x^2-6x+9}{x-3}$ when $x \neq 3$, then $f(3) =$

2. Let f be the function defined by

$$f(x) = \begin{cases} \frac{x^2-14x+40}{x-10}, & x \neq 10 \\ a, & x = 10 \end{cases}$$

For what value of a is f continuous at $x = 10$?

3. Let f be the function defined by

$$f(x) = \begin{cases} \frac{x^2+13x+36}{b(x+4)}, & x \neq -4 \\ b, & x = -4 \end{cases}$$

For what value of b is f continuous at $x = -4$?

4. If the function f is continuous for all real numbers and if $f(x) = \frac{x^2+3x-4}{x-1}$ when $x \neq 1$, then $f(1) =$

5. Let f be the function defined by

$$f(x) = \begin{cases} \frac{\sin(4x)}{6x}, & x \neq 0 \\ c, & x = 0 \end{cases}$$

For what value of c is f continuous at $x = 0$?

6. Let f be the function defined by

$$f(x) = \begin{cases} \frac{x^2-8x+12}{x-2}, & x \neq 2 \\ c, & x = 2 \end{cases}$$

For what value of c is f continuous at $x = 2$?