

Dividing Out and Rationalizing to Find Limits

Name _____

Date _____ Period _____

Let c be a real number and $f(x)$ and $g(x)$ agree at all but one point, specifically $x = c$. If the limit of $g(x)$ as x approaches c exists and the limit of $f(x)$ as x approaches c exists, then...

$$\lim_{x \rightarrow c} f(x) = \lim_{x \rightarrow c} g(x)$$

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

$$\lim_{x \rightarrow -3} f(x)$$

$$\text{Let } f(x) = \frac{x^3 - 27}{x - 3}$$

$$\lim_{x \rightarrow 3} f(x)$$

$$\text{Let } f(x) = \frac{x^2 + 3x - 4}{x^2 - 1}$$

$$\lim_{x \rightarrow 1} f(x)$$

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

$$\lim_{x \rightarrow 0} f(x)$$

$$\text{Let } f(x) = \frac{\sqrt{x+5} - 3}{x-4}$$

$$\lim_{x \rightarrow 4} f(x)$$

$$\text{Let } f(x) = \frac{\sqrt{x+2} - \sqrt{2}}{x}$$

$$\lim_{x \rightarrow 0} f(x)$$