

Find the following limits:

2010limitreview.doc

$$\lim_{x \rightarrow 10} \frac{x^2 - 100}{x - 10}$$

$$\lim_{x \rightarrow \frac{\pi}{2}^+} \tan x$$

$$\lim_{h \rightarrow 0} \frac{\sec(x+h) - \sec(x)}{h}$$

$$\lim_{x \rightarrow \infty} e^{-x}$$

$$\lim_{x \rightarrow \infty} \frac{3x^3 + 7x^2 + 58}{25 - 10x^3}$$

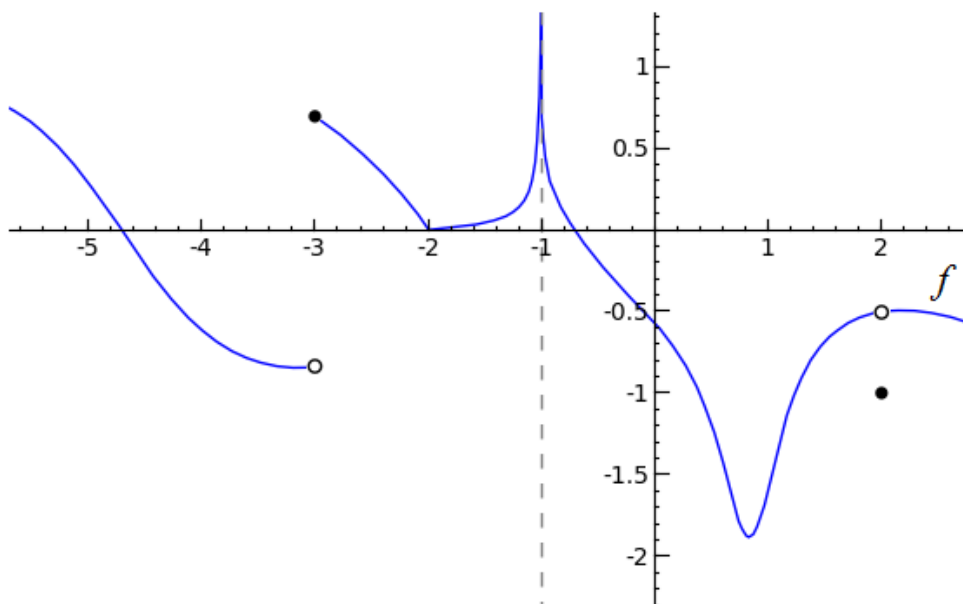
$$\lim_{h \rightarrow 0} \frac{|x+h| - |x|}{h}$$

$$\lim_{x \rightarrow 3} \frac{x^2 - 9}{x^2 - 5x + 6}$$

$$\text{If } f(x) = \begin{cases} 2x - 3 & x \leq 2 \\ x^2 + a & x > 2 \end{cases}$$

Find the value of a so that $f(x)$ is continuous at $x = 2$

From Google Images:



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

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

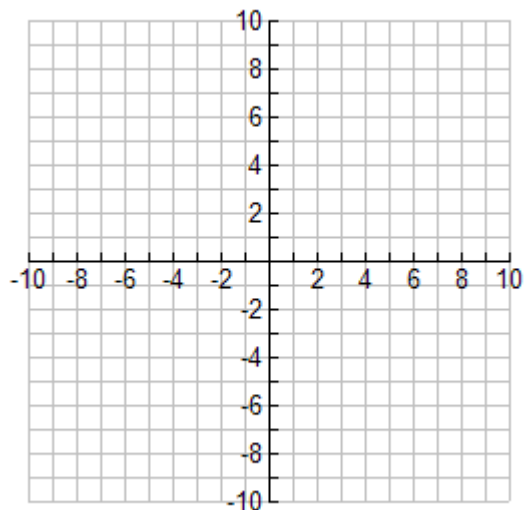
$$\lim_{x \rightarrow -2} f(x)$$

$$\lim_{x \rightarrow 2} f(x)$$

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

Show [using Calculus], that the graph of f is not continuous at $x = -3$ and $x = 2$

On the axes provided below, draw a graph of a function which has the listed attributes



- (a) $\lim_{x \rightarrow -6} f(x) = -2$
- (b) $\lim_{x \rightarrow -2^-} f(x) = \infty$
- (c) $\lim_{x \rightarrow -2^+} f(x) = -\infty$
- (d) $\lim_{x \rightarrow -\infty} f(x) = 5$
- (e) $\lim_{x \rightarrow 0} f(x) = 4$
- (f) $f(0) = -6$
- (g) $\lim_{x \rightarrow 6^-} f(x) = 0$
- (g) $\lim_{x \rightarrow 6^+} f(x) = -7$
- (h) $f(6) = -7$
- (i) $\lim_{x \rightarrow \infty} f(x) = 3$