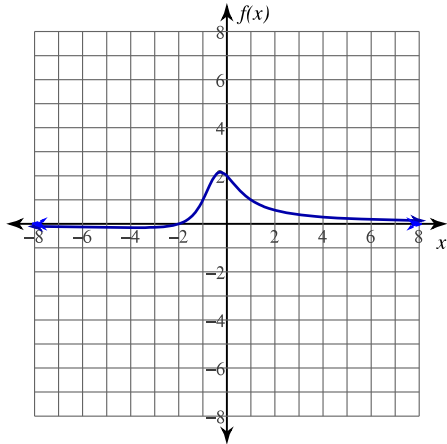


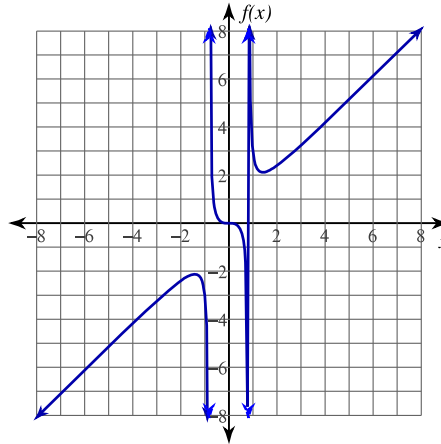
Evaluating Limits

Evaluate each limit.

1) $\lim_{x \rightarrow -\infty} \frac{x + 2}{x^2 + x + 1}$

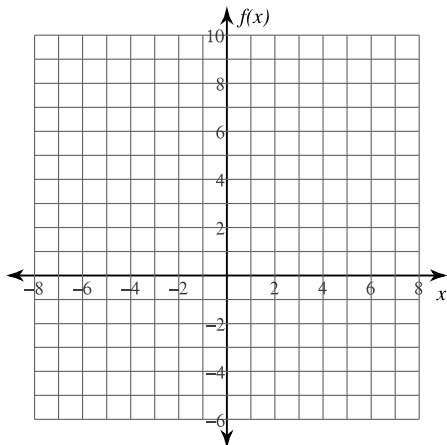


2) $\lim_{x \rightarrow -\infty} \frac{3x^3}{3x^2 - 2}$

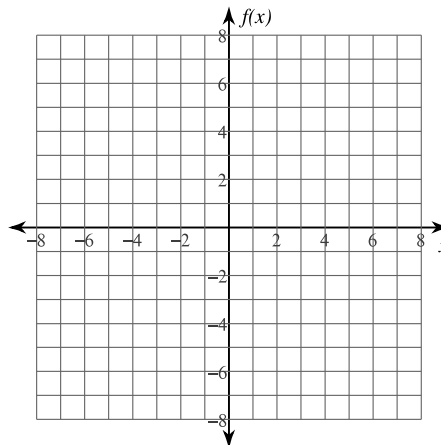


Evaluate each limit. You may use the provided graph to sketch the function.

3) $\lim_{x \rightarrow -\infty} \frac{2x^2}{x^2 - 4}$



4) $\lim_{x \rightarrow \infty} -\frac{3x^2}{4x + 4}$



Evaluate each limit.

$$5) \lim_{x \rightarrow -\infty} (x^3 - 4x^2 + 5)$$

$$6) \lim_{x \rightarrow \infty} \frac{2x^3}{3x^2 - 4}$$

$$7) \lim_{x \rightarrow \infty} \frac{x^3}{4x^2 + 3}$$

$$8) \lim_{x \rightarrow \infty} \frac{x + 1}{2x^2 + 2x + 1}$$

$$9) \lim_{x \rightarrow -\infty} \frac{\sqrt{2x^2 + 3}}{2x + 3}$$

$$10) \lim_{x \rightarrow -\infty} \frac{\sqrt{2x^2 + 1}}{4x + 2}$$

$$11) \lim_{x \rightarrow \infty} \left(-\frac{\ln x}{x^4} + 1 \right)$$

$$12) \lim_{x \rightarrow \infty} (-e^{-3x} - 1)$$

$$13) \lim_{x \rightarrow \infty} (e^x - 3)$$

$$14) \lim_{x \rightarrow -\infty} -e^{-4x}$$

$$15) \lim_{x \rightarrow \infty} \cos(2x)$$

$$16) \lim_{x \rightarrow -\infty} \frac{x}{\cos(-3x)}$$

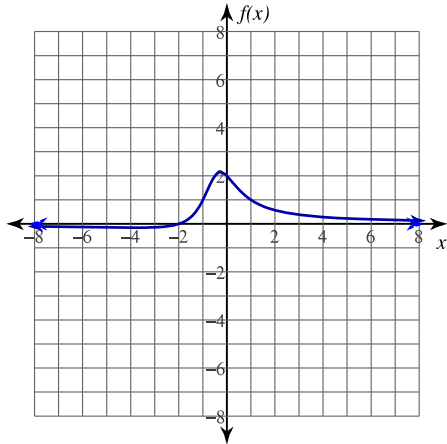
$$17) \lim_{x \rightarrow \infty} -\frac{2x}{\cos \frac{1}{x}}$$

$$18) \lim_{x \rightarrow \infty} x \cos \frac{1}{x}$$

Evaluating Limits

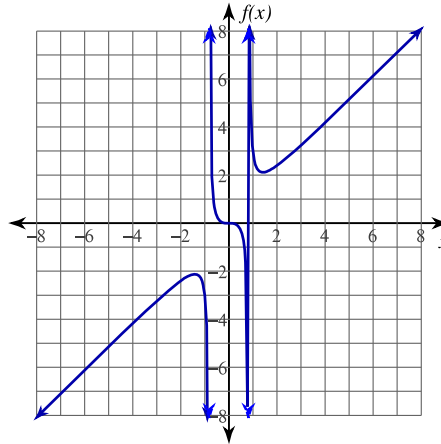
Evaluate each limit.

1) $\lim_{x \rightarrow -\infty} \frac{x + 2}{x^2 + x + 1}$



0

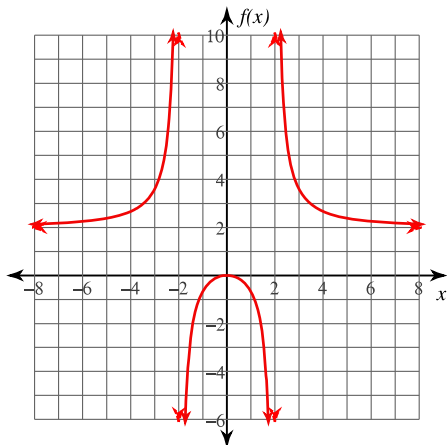
2) $\lim_{x \rightarrow -\infty} \frac{3x^3}{3x^2 - 2}$



$-\infty$

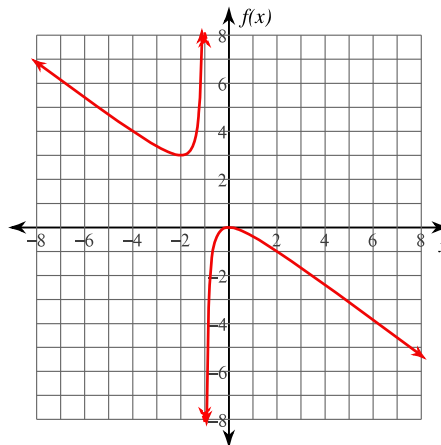
Evaluate each limit. You may use the provided graph to sketch the function.

3) $\lim_{x \rightarrow -\infty} \frac{2x^2}{x^2 - 4}$



2

4) $\lim_{x \rightarrow \infty} -\frac{3x^2}{4x + 4}$



$-\infty$

Evaluate each limit.

$$5) \lim_{x \rightarrow -\infty} (x^3 - 4x^2 + 5)$$

$-\infty$

$$6) \lim_{x \rightarrow \infty} \frac{2x^3}{3x^2 - 4}$$

∞

$$7) \lim_{x \rightarrow \infty} \frac{x^3}{4x^2 + 3}$$

∞

$$8) \lim_{x \rightarrow \infty} \frac{x + 1}{2x^2 + 2x + 1}$$

0

$$9) \lim_{x \rightarrow -\infty} \frac{\sqrt{2x^2 + 3}}{2x + 3}$$

$-\frac{\sqrt{2}}{2}$

$$10) \lim_{x \rightarrow -\infty} \frac{\sqrt{2x^2 + 1}}{4x + 2}$$

$-\frac{\sqrt{2}}{4}$

$$11) \lim_{x \rightarrow \infty} \left(-\frac{\ln x}{x^4} + 1 \right)$$

1

$$12) \lim_{x \rightarrow \infty} (-e^{-3x} - 1)$$

-1

$$13) \lim_{x \rightarrow \infty} (e^x - 3)$$

∞

$$14) \lim_{x \rightarrow -\infty} -e^{-4x}$$

$-\infty$

$$15) \lim_{x \rightarrow \infty} \cos(2x)$$

Does not exist. Oscillates.

$$16) \lim_{x \rightarrow -\infty} \frac{x}{\cos(-3x)}$$

Does not exist. Oscillates.

$$17) \lim_{x \rightarrow \infty} -\frac{2x}{\cos \frac{1}{x}}$$

$-\infty$

$$18) \lim_{x \rightarrow \infty} x \cos \frac{1}{x}$$

∞