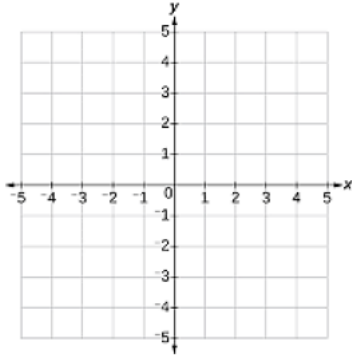


Vertical and Horizontal Asymptotes ... Set 1

Vertical and Horizontal Asymptotes Worksheet

State the vertical, horizontal, or slant asymptotes for the following (justify using limits). Sketch the graph and find the end behavior.

1. $f(x) = \frac{3}{x-2}$



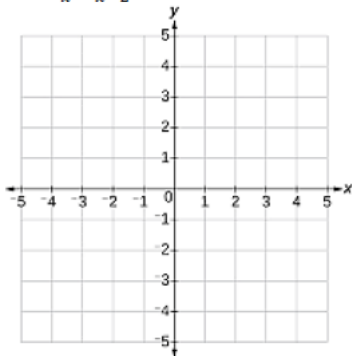
Vertical Asymptote: _____

Horizontal Asymptote: _____

Slant Asymptote: _____

End Behavior: $\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}}$
 $\lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$

2. $f(x) = \frac{3x}{x^2-x-2}$



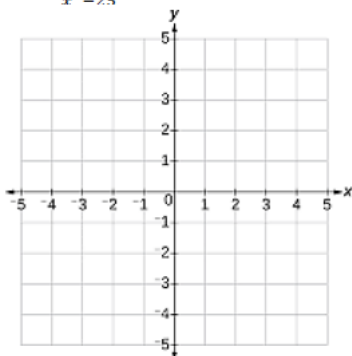
Vertical Asymptote: _____

Horizontal Asymptote: _____

Slant Asymptote: _____

End Behavior: $\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}}$
 $\lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$

3. $f(x) = \frac{x^2-5x}{x^2-25}$



Vertical Asymptote: _____

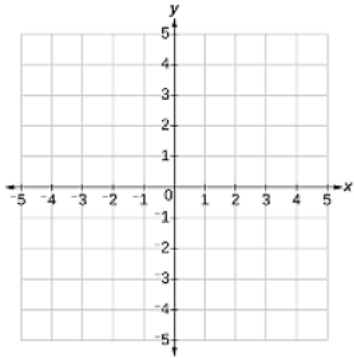
Horizontal Asymptote: _____

Slant Asymptote: _____

End Behavior: $\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}}$
 $\lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$

Vertical and Horizontal Asymptotes ... Set 1

4. $f(x) = \frac{3x^2-4}{x^2-9}$



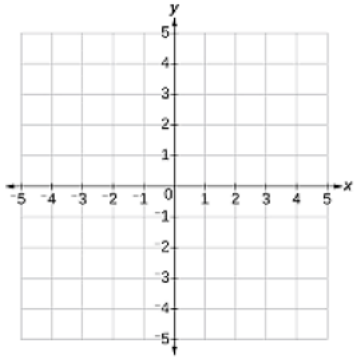
Vertical Asymptote: _____

Horizontal Asymptote: _____

Slant Asymptote: _____

End Behavior: $\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}}$
 $\lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$

5. $f(x) = \frac{x^2-x-2}{x-1}$



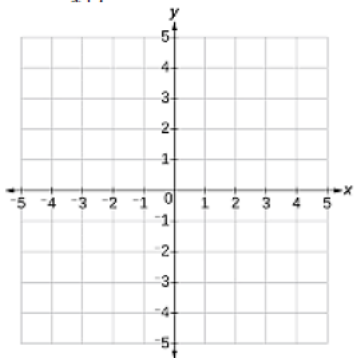
Vertical Asymptote: _____

Horizontal Asymptote: _____

Slant Asymptote: _____

End Behavior: $\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}}$
 $\lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$

6. $f(x) = \frac{x^2+3x}{x+1}$



Vertical Asymptote: _____

Horizontal Asymptote: _____

Slant Asymptote: _____

End Behavior: $\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}}$
 $\lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$