

Keeper 2.5 – Limit Involving Infinity

Virtual Problems

Vertical and Horizontal Asymptotes

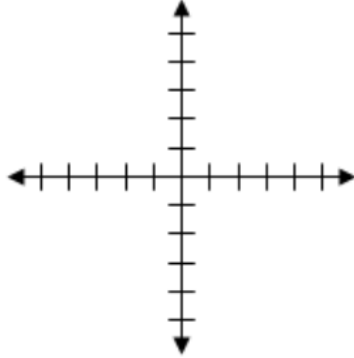
1. $f(x) = \frac{x + 5}{x^2 + 3x - 10}$

Vertical Asymptote:

Justification:

Horizontal
Asymptote:

Justification:



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

Vertical Asymptote:

Justification:

Horizontal Asymptote:

Justification:

3. $y = \frac{3x^7 + 2x^3 + 5}{x^6 + 3}$

Vertical Asymptote:

Justification:

Horizontal Asymptote:

Justification:

4. $y = \frac{2x^3 - x + 4}{x^5 + 3x}$

Vertical Asymptote:

Justification:

Horizontal Asymptote:

Justification:

Infinite Limit Examples:

$$5. \lim_{x \rightarrow \infty} \frac{3-5x^2}{6+7x}$$

$$6. \lim_{x \rightarrow \infty} \frac{x^3+x}{3x^6+1}$$

$$7. \lim_{x \rightarrow -\infty} \frac{x-2}{x^2+2x+1}$$

$$8. \lim_{x \rightarrow \infty} \frac{7x^3+4x}{2x^3-x^2+3}$$

$$9. \lim_{x \rightarrow \infty} \frac{5x^3+7}{3x^2-x}$$

$$10. \lim_{x \rightarrow \infty} \frac{x^3+3x^2+2x+1}{5x^3-1}$$

$$11. \lim_{x \rightarrow \infty} \sin(x)$$

$$12. \lim_{x \rightarrow -\infty} (5-x)$$

$$13. \lim_{x \rightarrow \infty} \sqrt[3]{x-5} + 6$$

$$14. \lim_{x \rightarrow -\infty} (3-x^3)$$

$$15. \lim_{x \rightarrow -\infty} \ln(x)$$

$$16. \lim_{x \rightarrow -\infty} (-\ln(x))$$