Limits at Infinity

1. Find the horizontal asymptote of the function
(similar to p.245 #1-6)

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

2. Find the horizontal asymptote of the function
(similar to p.245 #1-6)

$$f(x) = \frac{5x^3 - 7x + 2}{4x^3 + 1}$$

3. Use a graphing utility to complete the table and estimate the limit as x approaches infinity.
(similar to p.245 #7-12)

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

x	10^0	10^1	10^2	10^3	10^4	10^5	10^6
f(x)							

4. Find the limit
(similar to p.245 #19-44)

$$\lim_{x \to -\infty} \left(\frac{7}{x} - \frac{x}{4} \right)$$

5. Find the limit
(similar to p.245 #19-44)

$$\lim_{x \to \infty} \left(\frac{x^2 + 5}{3x^2 - 7} \right)$$

6. Find the limit
(similar to p.245 #19-44)

$$\lim_{x\to\infty}\frac{x}{\sqrt{x^2-2}}$$

7. Find the limit
(similar to p.245 #19-44)

$$\lim_{x\to\infty}\sin\frac{1}{x}$$

8. Find the limit
(similar to p.245 #19-44)

$$\lim_{x\to-\infty}\left(3+2e^{x}\right)$$

9. Find the limit
(similar to p.245 #19-44)

$$\lim_{x\to\infty}\left(\frac{1}{2}+\ln\left(\frac{x^2-3}{x^2}\right)\right)$$