| **Find the end behavior of the following rational functions.** |

1. $f(x) = \dfrac{x^3 - 8}{x^2 - 25}$

2. $g(x) = \dfrac{x+1}{(2x+5)(x-4)}$

3. $d(t) = \dfrac{2t^3 - 3t^2 + 2t - 1}{3t^3 + 2t^2 - 5t - 4}$

| **Find the horizontal asymptote of the following rational functions if one exists.** |

4. $g(x) = \dfrac{5x^4 - 2x^2}{7x^3 - 4}$

5. $f(x) = \dfrac{4-x}{3x^2 + 5x - 2}$

6. $h(n) = \dfrac{n^2 - 1}{4n^2 - 9}$

| **Evaluate the following limits.** |

7. $\displaystyle\lim_{x \to \infty} \dfrac{3x^2 + 2x - 5}{2x^2 \mp 3x + 7} =$

8. $\displaystyle\lim_{x \to -\infty} \dfrac{x^3 - 4}{x^2} =$

9. $\displaystyle\lim_{n \to \infty} \dfrac{2n^2 - 3}{(3n+1)(n+8)} =$

Answers to 1.7B CA #2

1. $\displaystyle\lim_{x \to -\infty} f(x) = -\infty$ $\displaystyle\lim_{x \to \infty} f(x) = \infty$	2. $\displaystyle\lim_{x \to -\infty} g(x) = 0$ $\displaystyle\lim_{x \to \infty} g(x) = 0$	3. $\displaystyle\lim_{t \to -\infty} d(t) = \frac{2}{3}$ $\displaystyle\lim_{t \to \infty} d(t) = \frac{2}{3}$
4. No horizontal asymptote	5. $y = 0$	6. $y = \frac{1}{4}$
7. $\frac{3}{2}$	8. $-\infty$ (does not exist)	9. $\frac{2}{3}$