

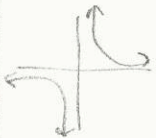
STATIONS ACTIVITY: LIMITS

Name: _____

Find the limit as the function goes to infinity.

1. $\lim_{x \rightarrow \infty} -3x^2 + 4x - 7 = -\infty$	2. $\lim_{x \rightarrow \infty} x^3 + 5 = \infty$	3. $\lim_{x \rightarrow \infty} -4x^3 + 6 = \infty$	4. $\lim_{x \rightarrow -\infty} 3 = 3$
5. $\lim_{x \rightarrow \infty} \frac{1}{2}x - \frac{4}{x^2} = \infty$	6. $\lim_{x \rightarrow -\infty} \frac{5x+5}{7x^2+1} = 0$	7. $\lim_{x \rightarrow \infty} \frac{x^2+2}{x-555} = \infty$	8. $\lim_{x \rightarrow -\infty} \frac{x}{x^2-1} = 0$

Find the limit.

9. $\lim_{x \rightarrow 1} (x^3 + 3x^2 - 2x - 17) = 1 + 3 - 2 - 17 = -15$	10. $\lim_{x \rightarrow 1} \frac{x-1}{x^2-1} = \lim_{x \rightarrow 1} \frac{x-1}{(x-1)(x+1)} = \lim_{x \rightarrow 1} \frac{1}{x+1} = \frac{1}{2}$	11. $\lim_{x \rightarrow 0} \frac{\frac{1}{2+x} - \frac{1}{2}}{x} = \frac{2 - (2+x)}{2(2+x)} = \frac{-x}{2(2+x)} = \frac{-x}{2(2+x)} \cdot \frac{1}{x} = \lim_{x \rightarrow 0} \frac{-1}{2(2+x)} = \frac{-1}{4}$
12. $\lim_{x \rightarrow 0} \frac{(4+x)^2 - 16}{x} = \frac{16 + 8x + x^2 - 16}{x} = \lim_{x \rightarrow 0} \frac{x(x+8)}{x} = \lim_{x \rightarrow 0} x+8 = 8$	13. $\lim_{x \rightarrow 0^+} \frac{3}{x} = \infty$ 	14. $\lim_{x \rightarrow 2} \sqrt{x-2}$ DNE