

Limits Worksheet #2

Name: _____

R: _____ P: _____

Evaluate

| | | | |
|---|--|---|--|
| 1. $\lim_{x \rightarrow \infty} 7 + \frac{1}{3x} - \frac{2}{x^2}$ | 2. $\lim_{x \rightarrow \infty} \frac{4x+8}{5x}$ | 3. $\lim_{x \rightarrow \infty} \frac{3x-1000}{x+100}$ | 4. $\lim_{x \rightarrow \infty} \frac{5x+5}{7x^2+1}$ |
| 5. $\lim_{x \rightarrow \infty} \frac{5x^2+2}{4x^2+7}$ | 6. $\lim_{x \rightarrow \infty} \frac{3x^3+5}{5x^2+1}$ | 7. $\lim_{x \rightarrow \infty} \frac{2x^2-4x}{x+1}$ | 8. $\lim_{x \rightarrow \infty} \frac{2x^2-4x}{x+1}$ |
| 9. $\lim_{x \rightarrow \infty} \frac{3x^3+2}{5x^2-1}$ | 10. $\lim_{x \rightarrow \infty} \frac{3x^2+2}{4x^2-1}$ | 11. $\lim_{x \rightarrow \infty} \frac{x^2+2}{x-555}$ | 12. $\lim_{x \rightarrow \infty} \frac{3-2x}{3x^3-1}$ |
| 13. $\lim_{x \rightarrow \infty} \frac{3-5x}{3x-1}$ | 14. $\lim_{x \rightarrow \infty} \frac{3-2x^2}{3x-1}$ | 15. $\lim_{x \rightarrow \infty} \frac{6x^2-2x-1}{2x^2+3x+2}$ | 16. $\lim_{x \rightarrow \infty} \frac{3x^3+2}{2x^2-9x^3+7}$ |
| 17. $\lim_{x \rightarrow \infty} \frac{x}{x^2-1}$ | 18. $\lim_{x \rightarrow \infty} \frac{8x^2+3x}{2x^2-1}$ | 19. $\lim_{x \rightarrow \infty} 10 - \frac{2}{x^2}$ | 20. $\lim_{x \rightarrow \infty} 4 + \frac{3}{x}$ |
| 21. $\lim_{x \rightarrow \infty} \frac{5x^2}{x+3}$ | 22. $\lim_{x \rightarrow \infty} \frac{1}{2}x - \frac{4}{x^2}$ | 23. $\lim_{x \rightarrow \infty} \frac{\sin x}{x}$ | 24. $\lim_{x \rightarrow \infty} \frac{\cos 2x}{3x}$ |

$$25. \lim_{x \rightarrow -1} f(x), f(x) = \begin{cases} x, & x < -1 \\ -x^2 + 2x, & x \geq -1 \end{cases}$$

$$26. \lim_{x \rightarrow -1^-} f(x), f(x) = \begin{cases} -x-8, & x \leq -1 \\ -x^2-4x-4, & x > -1 \end{cases}$$

$$27. \lim_{x \rightarrow -3} f(x), f(x) = \begin{cases} -x^2-10x-24, & x \leq -3 \\ 2x+3, & x > -3 \end{cases}$$

$$28. \lim_{x \rightarrow 2} f(x), f(x) = \begin{cases} -x^2+2, & x \neq 2 \\ -5, & x = 2 \end{cases}$$

$$29. \lim_{x \rightarrow -3} \frac{x+3}{x^2+2x-3}$$

$$30. \lim_{x \rightarrow 3} \frac{x^2-7x+12}{x-3}$$

$$31. \lim_{x \rightarrow -2} \frac{x^2-4}{x+2}$$

$$32. \lim_{x \rightarrow 2} \frac{\frac{1}{x} - \frac{1}{2}}{x-2}$$

$$33. \lim_{x \rightarrow -2} \frac{\frac{2}{x+2} + \frac{3}{x}}{\frac{1}{x^2-4}}$$