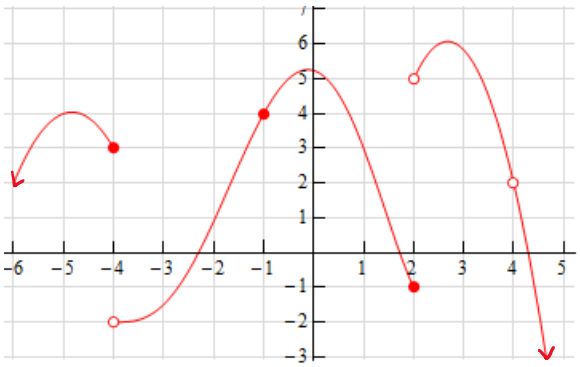
**Precalculus Limit Worksheet (2 pages)** Name_____ Per ____

Evaluate each according to the graph of $f(x)$ shown.

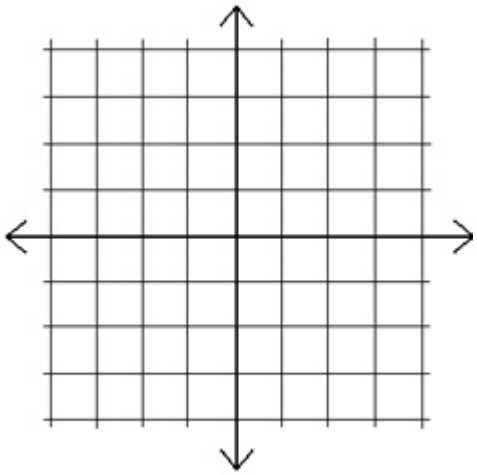
| | |
|---|---|
| 1. $\lim_{x\to -4^-} f(x) =$ | 8. $\lim_{x\to -1^+} f(x) =$ |
| 2. $\lim_{x\to -4^+} f(x) =$ | 9. $\lim_{x\to -1} f(x) =$ |
| 3. $\lim_{x\to -4} f(x) =$ | 10. $\lim_{x\to 4} f(x) =$ |
| 4. $\lim_{x\to 2^+} f(x) =$ | 11. $f(-4) =$ |
| 5. $\lim_{x\to 2^-} f(x) =$ | 12. $f(-1) =$ |
| 6. $\lim_{x\to 2} f(x) =$ | 13. $f(2) =$ |
| 7. $\lim_{x\to -1^-} f(x) =$ | 14. $f(4) =$ |
| 15. $\lim_{x\to -\infty} f(x) =$ | 16. $\lim_{x\to \infty} f(x) =$ |




Draw a graph with the given features.

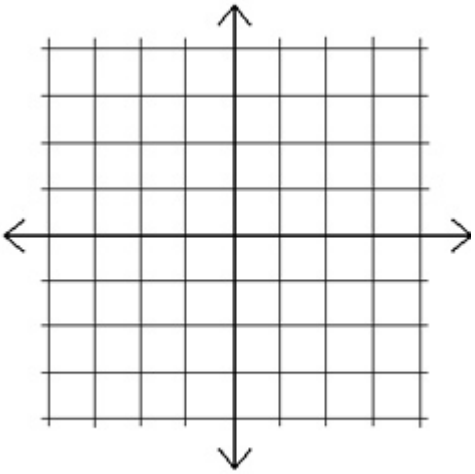
17. $\lim_{x\to -\infty} g(x) = 3,\ \lim_{x\to \infty} g(x) = 0$

$\lim_{x\to 0} g(x) = 2,\ g(0) = DNE$



18. $\lim_{x\to -\infty} g(x) = \infty,\ \lim_{x\to \infty} g(x) = \infty,\ g(1) = -2,$

$\lim_{x\to 1^-} g(x) = 3,\ \lim_{x\to 3} g(x) = 0,\ g(3) = 0$

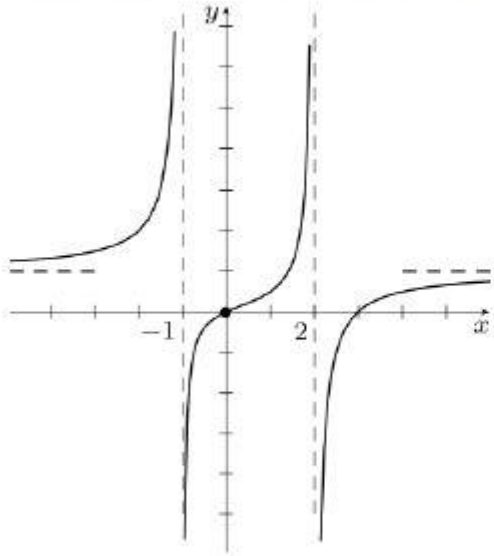


19. Evaluate each limit.

| | | |
|---|---|---|
| $\lim_{x\to 1}(3x-5) =$ | $\lim_{x\to 30^\circ}(\sin x) =$ | $\lim_{x\to \infty}(-2x^3+5x-1) =$ |
| $\lim_{x\to 0^+}(\ln x) =$ | $\lim_{x\to \infty}\frac{2x+5}{x} =$ | $\lim_{x\to 0^+}\frac{2x+5}{x} =$ |
| $\lim_{x\to 3}\frac{x^2-9}{x-3} =$ | $\lim_{x\to 4}\frac{x^2-5x+4}{x^2-7x+12} =$ | $\lim_{x\to -\infty} e^{-x} =$ |

CONTINUE ON THE BACK

20. Use the graph of the function $f(x)$ to answer each question.
Use $\infty$, $-\infty$ or $DNE$ where appropriate.




(a) $f(0) =$

(b) $f(2) =$

(c) $f(3) =$

(d) $\lim_{x \to -1} f(x) =$

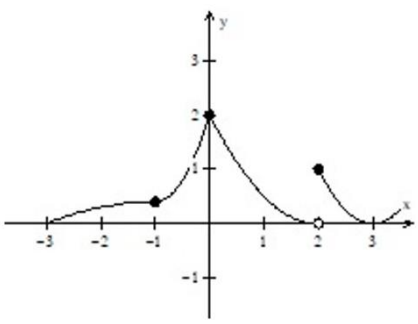
(e) $\lim_{x \to 0} f(x) =$

(f) $\lim_{x \to 2^+} f(x) =$

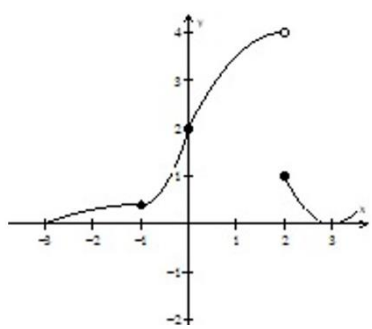
(g) $\lim_{x \to \infty} f(x) =$

21. Use the graphs for $f(x)$ $and$ $g(x)$ to answer the problems below.

*f(x)*



*g(x)*



a) $\lim_{x \to 0^+} \left(f\left(g(x)\right)\right) =$

b) $\lim_{x \to 0} \left(g\left(f(x)\right)\right) =$

c) $\lim_{x \to 3} \left(f\left(g(x)\right)\right) =$

d) $\lim_{x \to 2^-} \left(g\left(f(x)\right)\right) =$