

1. $\lim_{x \rightarrow 7} \frac{x^2 - 6x - 7}{x^2 - 9x + 14}$	2. $\lim_{x \rightarrow \infty} \frac{9x + 5x^8 - 15x^2}{42 + 6x^2 - 6}$	3. $\lim_{x \rightarrow 2} \frac{\sqrt{3x+3} - 3}{x-2}$
4. $\lim_{h \rightarrow 0} \frac{[4(x+h)^2 + 3(x+h)] - (4x^2 + 3x)}{h}$	5. $\lim_{x \rightarrow -4} \frac{3x+15}{x^2-16}$	6. $\lim_{x \rightarrow -\infty} \frac{x^3 + 5x^4 + 8x^{20}}{4x + 6x^{20} - 28x^8}$
7. $\lim_{x \rightarrow 5} \frac{\frac{1}{5} - \frac{1}{x}}{x^2 - 25}$	8. $f(x) = \begin{cases} -x^2 + 5 & x < 2 \\ 4x & 2 \leq x < 4 \\ x^2 & 4 \leq x \end{cases}$ $\lim_{x \rightarrow 2} f(x)$	9. $\lim_{x \rightarrow -\infty} \frac{17x + 5x^{41}}{42x + 6x^3}$

ANSWER BANK (front and back)

0	2	$\frac{8}{5}$	16	$-\infty$	1	∞	-1	DNE	2	4	3	1	DNE	DNE	DNE	DNE	2
$\frac{4}{3}$	$\frac{1}{250}$	-2	$\frac{1}{2}$	-1	4	2	4	$\frac{1}{8}$	$-\infty$	4	0	4	$8x + 3$	$-\frac{5}{12}$	$-\infty$	∞	∞

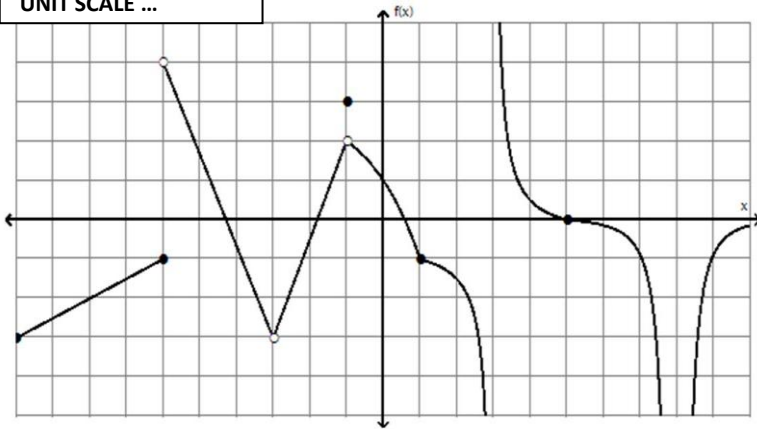
$$10. \lim_{x \rightarrow \infty} \frac{63x^3 - 1502x^2}{x + 8x^6 - 12x^3}$$

$$11. f(x) = \begin{cases} -x^2 + 5 & x < 2 \\ 4x & 2 \leq x < 4 \\ x^2 & 4 \leq x \end{cases}$$

$$\lim_{x \rightarrow 4} f(x)$$

$$12. \lim_{x \rightarrow 1} \frac{3x^6 + 15x}{x^2 + 8x}$$

UNIT SCALE ...



$$13a. \lim_{x \rightarrow -6^-} f(x)$$

$$b. \lim_{x \rightarrow -6^+} f(x)$$

$$c. f(-6) =$$

$$d. \lim_{x \rightarrow -1^-} f(x)$$

$$e. \lim_{x \rightarrow -1^+} f(x)$$

$$f. f(-1) =$$

$$g. \lim_{x \rightarrow 3^-} f(x)$$

$$h. \lim_{x \rightarrow 3^+} f(x)$$

$$i. f(3) =$$

$$j. \lim_{x \rightarrow 8^-} f(x)$$

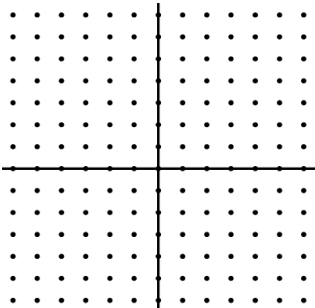
$$k. \lim_{x \rightarrow 8^+} f(x)$$

$$l. f(8) =$$

$$m. \lim_{x \rightarrow 5^-} f(x)$$

Graph:

$$f(x) = \begin{cases} |x + 3| & -6 \leq x < -1 \\ 2x & -1 \leq x < 2 \\ -(x - 3)^2 + 5 & 2 \leq x \end{cases}$$



14. For the graph to the left, find the following limits.

$$a. \lim_{x \rightarrow -1^-} f(x)$$

$$b. \lim_{x \rightarrow -1^+} f(x)$$

$$c. \lim_{x \rightarrow 2^-} f(x)$$

$$d. \lim_{x \rightarrow 2^+} f(x)$$

$$e. \lim_{x \rightarrow 2} f(x)$$

$$f. \lim_{x \rightarrow -1} f(x)$$

$$g. \lim_{x \rightarrow -4} f(x)$$

$$h. \lim_{x \rightarrow 5} f(x)$$

15. Make up a limit problem that has an answer of the remaining value in the answer bank.

$$16. \lim_{x \rightarrow -6} \frac{5x + 30}{x^2 - 36}$$

$$17. \lim_{x \rightarrow -4} \frac{x + 4}{\sqrt{x + 8} - 2}$$