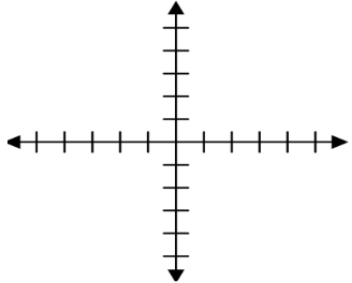


Keeper 2.4 – One Sided Limits

Virtual Problems

Examples: Find the Limit Graphically

1 $F(x) = \frac{|3x+3|}{2x+2}$



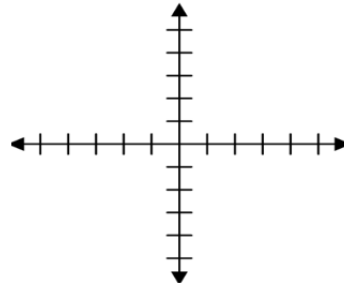
a. $\lim_{x \rightarrow -1^+} F(x)$

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

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

d. $F(-1)$

2. $f(x) = \frac{2}{x-3}$



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

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

c. $\lim_{x \rightarrow 3} f(x)$

d. $f(3)$

3. Find the limits algebraically:

$$F(x) = \begin{cases} x^2 - 10, & \text{if } x < 4 \\ -5, & \text{if } x = 4 \\ 4 - x^2, & \text{if } x > 4 \end{cases}$$

a. $\lim_{x \rightarrow 4^+} f(x)$

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

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

d. $f(4)$

Find the Limit Algebraically:

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

7. $\lim_{x \rightarrow -3^+} \frac{5}{x+3}$

8. $\lim_{x \rightarrow 2^+} -\frac{7}{2-x}$

9. $\lim_{x \rightarrow 5^+} \frac{7}{5-x}$

$$10. \lim_{x \rightarrow 2^+} \frac{|x-2|}{x-2}$$

$$11. \lim_{x \rightarrow 5^+} \frac{15-3x}{|4x-20|}$$

$$12. \lim_{x \rightarrow 5^-} \frac{4x-20}{|x-5|}$$

$$13. \lim_{x \rightarrow 5} \frac{3x-15}{|4x-20|}$$

$$14. \lim_{x \rightarrow 5^+} \frac{|x-4|}{x^2-3x+2}$$

$$15. \lim_{x \rightarrow 5^+} \sqrt{x-5}$$

$$16. \lim_{x \rightarrow 5^+} \sqrt{5-x}$$

$$17. \lim_{x \rightarrow 5} \sqrt[3]{x-5}$$