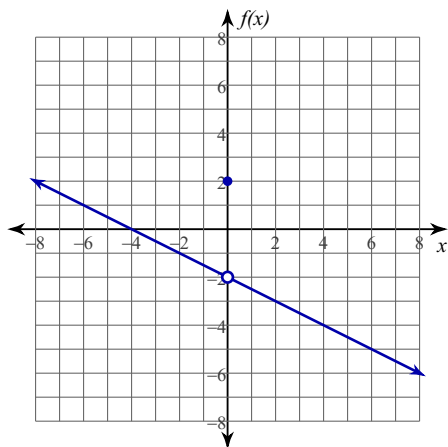


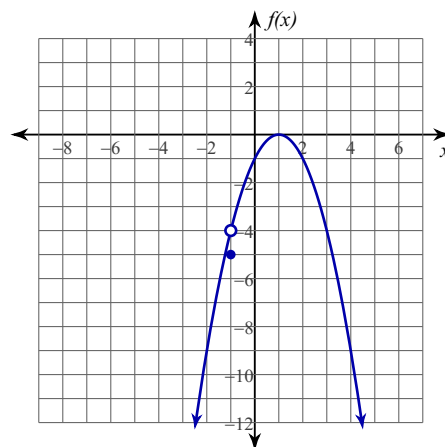
Finding Limits Graphically and Numerically

Evaluate each limit.

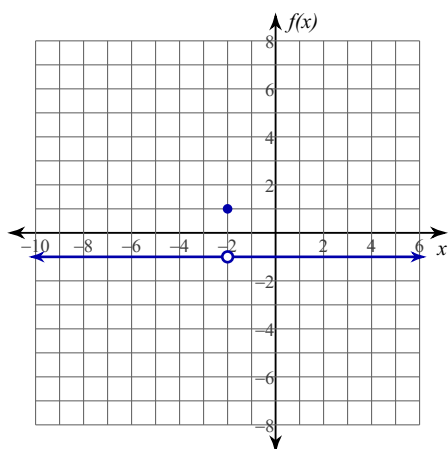
$$1) \lim_{x \rightarrow 0} f(x), f(x) = \begin{cases} -2 - \frac{x}{2}, & x \neq 0 \\ 2, & x = 0 \end{cases}$$



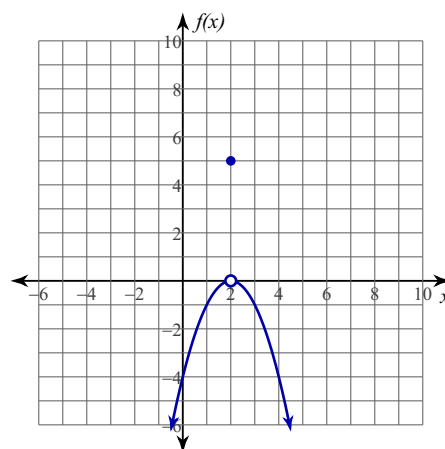
$$2) \lim_{x \rightarrow -1} f(x), f(x) = \begin{cases} -x^2 + 2x - 1, & x \neq -1 \\ -5, & x = -1 \end{cases}$$



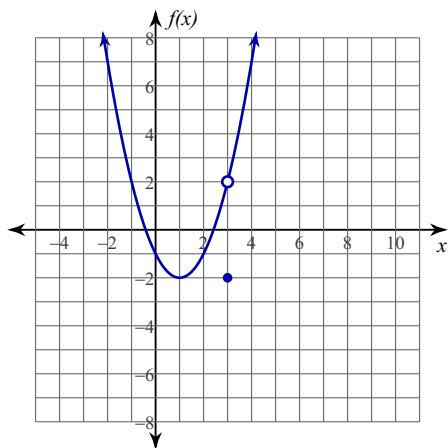
$$3) \lim_{x \rightarrow -2} f(x), f(x) = \begin{cases} -1, & x \neq -2 \\ 1, & x = -2 \end{cases}$$



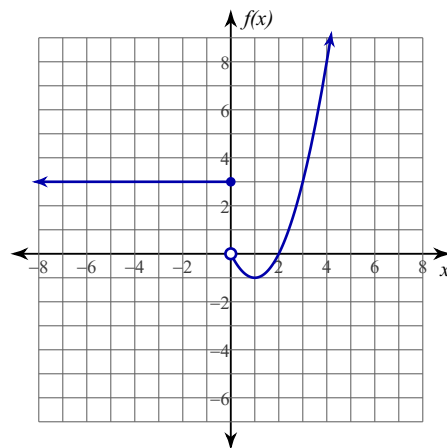
$$4) \lim_{x \rightarrow 2} f(x), f(x) = \begin{cases} -x^2 + 4x - 4, & x \neq 2 \\ 5, & x = 2 \end{cases}$$



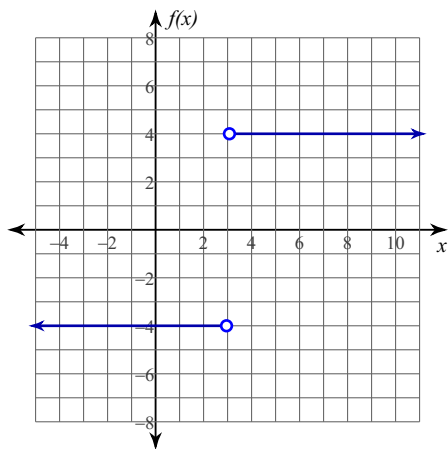
$$5) \lim_{x \rightarrow 3} f(x), f(x) = \begin{cases} x^2 - 2x - 1, & x \neq 3 \\ -2, & x = 3 \end{cases}$$



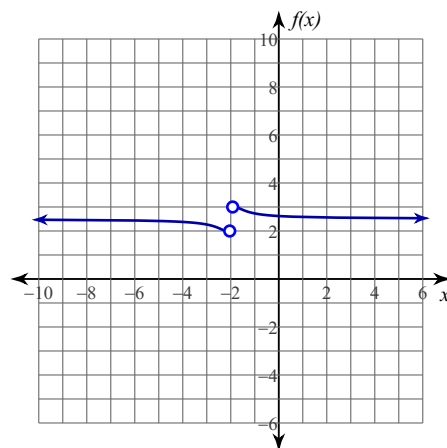
$$6) \lim_{x \rightarrow 0} f(x), f(x) = \begin{cases} 3, & x \leq 0 \\ x^2 - 2x, & x > 0 \end{cases}$$



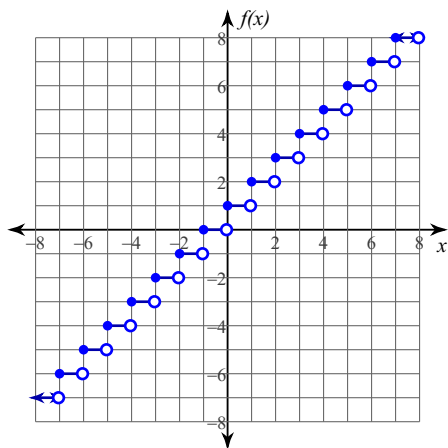
$$7) \lim_{x \rightarrow 3} \frac{4x - 12}{|x - 3|}$$



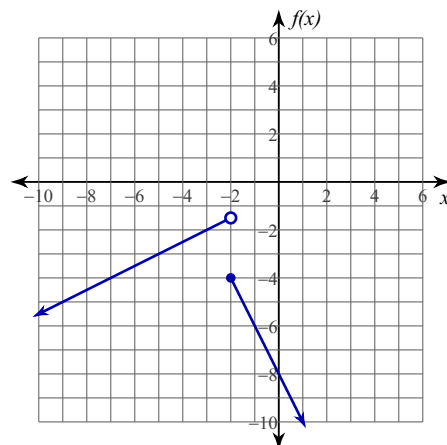
$$8) \lim_{x \rightarrow -2} \left(\frac{\frac{1}{e^{x+2}}}{\frac{1}{e^{x+2}} + 1} + 2 \right)$$



$$9) \lim_{x \rightarrow 0} \lfloor x + 1 \rfloor$$



$$10) \lim_{x \rightarrow -2} f(x), f(x) = \begin{cases} \frac{x}{2} - \frac{1}{2}, & x < -2 \\ -2x - 8, & x \geq -2 \end{cases}$$



$$11) \lim_{x \rightarrow 1} \frac{x^2 - 3x + 2}{x - 1}$$

$$12) \lim_{x \rightarrow 0} f(x), f(x) = \begin{cases} -x^2 + 2x + 2, & x \neq 0 \\ -2, & x = 0 \end{cases}$$

$$13) \lim_{x \rightarrow 3} f(x), f(x) = \begin{cases} -x^2 + 4x - 2, & x \neq 3 \\ -2, & x = 3 \end{cases}$$

$$14) \lim_{x \rightarrow -2} f(x), f(x) = \begin{cases} x^2 + 4x + 4, & x \neq -2 \\ -3, & x = -2 \end{cases}$$

$$15) \lim_{x \rightarrow -1} f(x), f(x) = \begin{cases} x^2 - 2x + 1, & x < -1 \\ -2x + 2, & x \geq -1 \end{cases}$$

$$16) \lim_{x \rightarrow 2} f(x), f(x) = \begin{cases} \frac{x}{2} + 2, & x \leq 2 \\ x^2 - 8x + 15, & x > 2 \end{cases}$$

$$17) \lim_{x \rightarrow 3} \frac{3e^{\frac{1}{x-3}}}{\frac{1}{e^{x-3}} + 1}$$

$$18) \lim_{x \rightarrow -3} f(x), f(x) = \begin{cases} -2, & x \leq -3 \\ -\frac{x}{2} - \frac{7}{2}, & x > -3 \end{cases}$$

Answers to Finding Limits Graphically and Numerically

- | | | | |
|---------------------|---------------------|--------------------|--------------------|
| 1) -2 | 2) -4 | 3) -1 | 4) 0 |
| 5) 2 | 6) Does not exist. | 7) Does not exist. | 8) Does not exist. |
| 9) Does not exist. | 10) Does not exist. | 11) -1 | 12) 2 |
| 13) 1 | 14) 0 | 15) 4 | 16) 3 |
| 17) Does not exist. | 18) -2 | | |