H3

A [Ex 2.2, p89]

Find the limits.

1. $\lim_{x \to -7} (2x + 5)$

3. $\lim_{x \to 2} (-x^2 + 5x - 2)$

15. $\lim_{h \to 0} \dfrac{3}{\sqrt{3h + 1} + 1}$

B

42. Suppose that $\lim_{x \to -2} p(x) = 4$, $\lim_{x \to -2} r(x) = 0$, and $\lim_{x \to -2} s(x) = -3$. Find

a. $\lim_{x \to -2} (p(x) + r(x) + s(x))$

b. $\lim_{x \to -2} p(x) \cdot r(x) \cdot s(x)$

c. $\lim_{x \to -2} (-4p(x) + 5r(x))/s(x)$

C

49. If $\sqrt{5 - 2x^2} \le f(x) \le \sqrt{5 - x^2}$ for $-1 \le x \le 1$, find $\lim_{x \to 0} f(x)$.

50. If $2 - x^2 \le g(x) \le 2 \cos x$ for all x, find $\lim_{x \to 0} g(x)$.

D

53. If $x^4 \le f(x) \le x^2$ for x in $[-1, 1]$ and $x^2 \le f(x) \le x^4$ for $x < -1$ and $x > 1$, at what points c do you automatically know $\lim_{x \to c} f(x)$? What can you say about the value of the limit at these points?

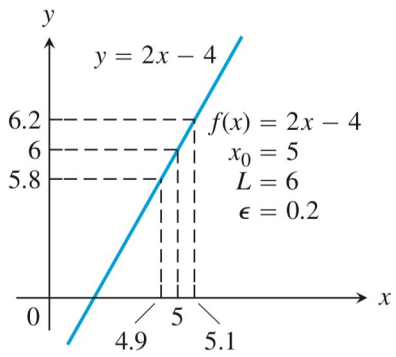
[Ex 2.3, p98]

E

In Exercises below, use the graphs to find a $\delta > 0$ such that for all x

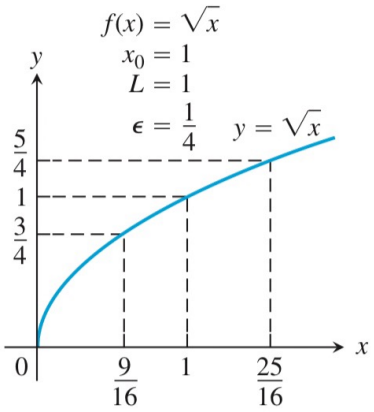
$$0 < |x - x_0| < \delta \quad \Rightarrow \quad |f(x) - L| < \epsilon.$$

7.

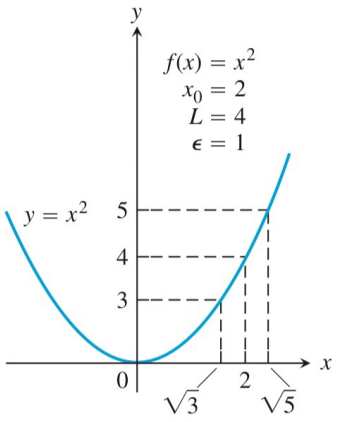


NOT TO SCALE

9.



11.



NOT TO SCALE

F

51. Define what it means to say that $\lim_{x \to 0} g(x) = k$.

52. Prove that $\lim_{x \to c} f(x) = L$ if and only if $\lim_{h \to 0} f(h + c) = L$.