

# Review of Limits

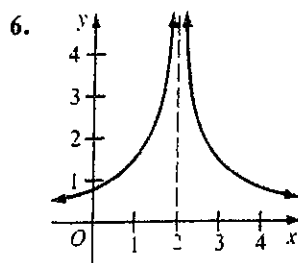
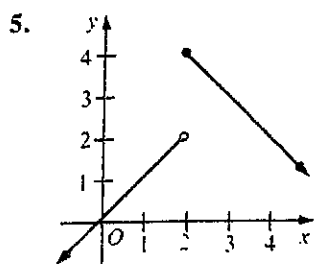
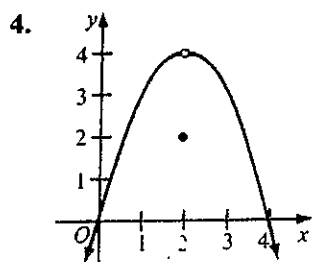
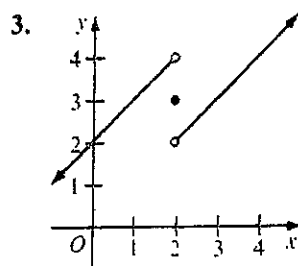
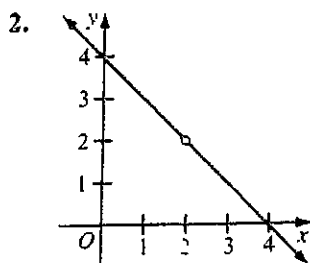
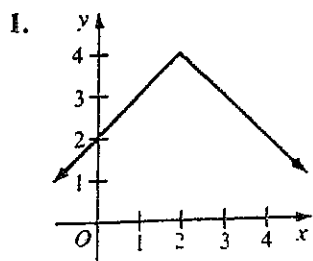
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E)

In Exercises 1-6 the graph of a function  $f$  is given. State whether or not  $\lim_{x \rightarrow 2} f(x)$  exists and, if it does, give its value.



D) Find each limit:

7)  $\lim_{x \rightarrow 2} (4x^3 + 5x + 9)$

8)  $\lim_{x \rightarrow 0} \sqrt{x}$

9)  $\lim_{x \rightarrow \frac{1}{2}} \left( \frac{8x^2 + 4x - 3}{4x^2 - 2x + 6} \right)$

10)  $\lim_{x \rightarrow 1} \frac{2x - 2}{x^2 + 3x - 4}$

11)  $\lim_{x \rightarrow \sqrt{2}} (x^2 - 3)(x^2 - 4)$

12)  $\lim_{x \rightarrow 0} \left( \frac{x^3 + 8}{x^3 - 8} \right)$

13)  $\lim_{x \rightarrow 2} \frac{4 + x^2}{2 - x}$

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

15)  $\lim_{x \rightarrow 1} \frac{1 - x}{x^2 - 1}$

16)  $\lim_{x \rightarrow 3} \left( \frac{x^3}{x-3} - \frac{27}{x-3} \right)$

17)  $\lim_{x \rightarrow 2} \frac{x^2 + x - 6}{x^2 - 4}$

18)  $\lim_{n \rightarrow -\infty} \frac{n-1}{2n}$

19)  $\lim_{n \rightarrow \infty} \frac{n^3 - 1}{2 + n^2}$

20)  $\lim_{n \rightarrow \infty} \frac{6n^2 - 5n - 4}{8n^2 + n - 7}$

21)  $\lim_{n \rightarrow -\infty} \frac{3n^2 - 5n + 2}{n + 2}$

22)  $\lim_{x \rightarrow +\infty} \frac{x+4}{3x^2 - 5}$

23)  $\lim_{x \rightarrow -\infty} \frac{5x^3 - 12x + 7}{4x^2}$

24)  $\lim_{x \rightarrow +\infty} \left( \frac{2}{x^2} - 4x \right)$

25)  $\lim_{x \rightarrow -\infty} \frac{\sqrt{x^2 + 4}}{x + 4}$