

Evaluating Limits

Evaluate each limit.

1) $\lim_{x \rightarrow 0} -1$

2) $\lim_{x \rightarrow -4} (-x - 4)$

3) $\lim_{x \rightarrow -2} (2x + 3)$

4) $\lim_{x \rightarrow 3} (-x^3 + 13x^2 - 56x + 81)$

5) $\lim_{x \rightarrow 2} (x^3 - 2x^2 - 2)$

6) $\lim_{x \rightarrow 5} -\sqrt{2x + 1}$

7) $\lim_{x \rightarrow -2} \sqrt[3]{-2x - 3}$

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

9) $\lim_{x \rightarrow 2} \frac{x - 6}{x^2 - 4x + 3}$

10) $\lim_{x \rightarrow \frac{\pi}{6}} \cos(x)$

Critical thinking questions:

11) Give an example of a limit that evaluates to 5.

12) Give an example of a limit of a quadratic function where the limit evaluates to 16.

Evaluating Limits

Evaluate each limit.

1) $\lim_{x \rightarrow 0} 1 -$

-1

2) $\lim_{x \rightarrow -4} (-x - 4)$

0

3) $\lim_{x \rightarrow -2} (2x + 3)$

-1

4) $\lim_{x \rightarrow 3} (-x^3 + 13x^2 - 56x + 81)$

3

5) $\lim_{x \rightarrow 2} (x^3 - 2x^2 - 2)$

-2

6) $\lim_{x \rightarrow 5} -\sqrt{2x + 1}$

 $-\sqrt{11}$

7) $\lim_{x \rightarrow -2} \sqrt[3]{-2x - 3}$

1

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

 $-\frac{6}{5}$

9) $\lim_{x \rightarrow 2} \frac{x - 6}{x^2 - 4x + 3}$

4

10) $\lim_{x \rightarrow \frac{\pi}{6}} \cos(x)$

 $\frac{\sqrt{3}}{2}$ **Critical thinking questions:**

11) Give an example of a limit that evaluates to 5.

Many answers. Ex: $\lim_{x \rightarrow 5} x$

12) Give an example of a limit of a quadratic function where the limit evaluates to 16.

Many answers. Ex: $\lim_{x \rightarrow 4} x^2$