

Simple Limit Evaluation

Evaluate each finite-point limit exactly by direct substitution.

1.

$$\lim_{x \rightarrow \frac{1}{6} \cdot \pi} 1 - \sin(x)$$

Exact limit: _____

2.

$$\lim_{x \rightarrow 3} -6 \cdot x + 5$$

Exact limit: _____

3.

$$\lim_{x \rightarrow -2} -2 + 2 \cdot e^{x-2}$$

Exact limit: _____

4.

$$\lim_{x \rightarrow 3} \frac{4 \cdot x - 5}{-4 \cdot x - 5}$$

Exact limit: _____

5.

$$\lim_{x \rightarrow \frac{1}{4} \cdot \pi} 2 \cdot \cos(x)$$

Exact limit: _____

6.

$$\lim_{x \rightarrow -1} -6 \cdot x^2 + 6 \cdot x + 1$$

Exact limit: _____

Simple Limit Evaluation

Evaluate each finite-point limit exactly by direct substitution.

7.

$$\lim_{x \rightarrow 0} 2 + (2)^x$$

Exact limit: _____

8.

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

Exact limit: _____

9.

$$\lim_{x \rightarrow \frac{1}{3} \cdot \pi} -1 - \tan(x)$$

Exact limit: _____

10.

$$\lim_{x \rightarrow \frac{-3}{2}} -2 \cdot x^3 + 2 \cdot x^2 - 6 \cdot x + 5$$

Exact limit: _____

Simple Limit Evaluation

Worked Answer Key

Evaluate each finite-point limit exactly by direct substitution.

1.

$$\lim_{x \rightarrow \frac{1}{6} \cdot \pi} 1 - \sin(x)$$

The function is continuous at the requested point. Substitute the exact point into the original expression.

$$\text{Limit} = \frac{1}{2}$$

Original domain: All real x.

2.

$$\lim_{x \rightarrow 3} -6x + 5$$

The function is continuous at the requested point. Substitute the exact point into the original expression.

$$\text{Limit} = -13$$

Original domain: All real x.

Simple Limit Evaluation

Worked Answer Key

Evaluate each finite-point limit exactly by direct substitution.

3.

$$\lim_{x \rightarrow -2} -2 + 2 \cdot e^{x-2}$$

The function is continuous at the requested point. Substitute the exact point into the original expression.

$$\text{Limit} = -2 + 2 \cdot e^{-4}$$

Original domain: All real x.

4.

$$\lim_{x \rightarrow 3} \frac{4 \cdot x - 5}{-4 \cdot x - 5}$$

The function is continuous at the requested point. Substitute the exact point into the original expression.

$$\text{Limit} = \frac{-7}{17}$$

Original domain: $-4 \cdot x - 5 \neq 0$

Simple Limit Evaluation

Worked Answer Key

Evaluate each finite-point limit exactly by direct substitution.

5.

$$\lim_{x \rightarrow \frac{1}{4} \cdot \pi} 2 \cdot \cos(x)$$

The function is continuous at the requested point. Substitute the exact point into the original expression.

$$\text{Limit} = \sqrt{2}$$

Original domain: All real x.

6.

$$\lim_{x \rightarrow -1} -6 \cdot x^2 + 6 \cdot x + 1$$

The function is continuous at the requested point. Substitute the exact point into the original expression.

$$\text{Limit} = -11$$

Original domain: All real x.

Simple Limit Evaluation

Worked Answer Key

Evaluate each finite-point limit exactly by direct substitution.

7.

$$\lim_{x \rightarrow 0} 2 + (2)^x$$

The function is continuous at the requested point. Substitute the exact point into the original expression.

$$\text{Limit} = 3$$

Original domain: All real x.

8.

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

The function is continuous at the requested point. Substitute the exact point into the original expression.

$$\text{Limit} = \frac{57}{20}$$

Original domain: $2 \cdot x - 2 \neq 0$

Simple Limit Evaluation

Worked Answer Key

Evaluate each finite-point limit exactly by direct substitution.

9.

$$\lim_{x \rightarrow \frac{1}{3} \cdot \pi} -1 - \tan(x)$$

The function is continuous at the requested point. Substitute the exact point into the original expression.

$$\text{Limit} = -1 - \sqrt{3}$$

Original domain: $\cos(x) \neq 0$

10.

$$\lim_{x \rightarrow \frac{-3}{2}} -2 \cdot x^3 + 2 \cdot x^2 - 6 \cdot x + 5$$

The function is continuous at the requested point. Substitute the exact point into the original expression.

$$\text{Limit} = \frac{101}{4}$$

Original domain: All real x.