

Finding Absolute Maximum and Absolute Minimum

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Identify the critical points and find the maximum and minimum value on the given interval I.

- 1) $f(x) = x^2 + 18x + 81$; $I = [-18, 0]$ 1) _____
A) Critical points: -9; maximum value 18; minimum value 0
B) Critical points: -18, 0, 81; minimum value 0
C) Critical points: -18, -9, 0; maximum value 81; minimum value 0
D) Critical points: -18, 0, 9; maximum value 81; minimum value 0
- 2) $f(x) = x^2 + 4x$; $I = \left[-\frac{5}{2}, -\frac{1}{2}\right]$ 2) _____
A) Critical points: -2; minimum value -4
B) Critical points: $-\frac{5}{2}, -2, -\frac{1}{2}$; maximum value $-\frac{7}{4}$; minimum value -4
C) Critical points: $-\frac{5}{2}, -2, -\frac{1}{2}$; maximum value $-\frac{15}{4}$; minimum value -4
D) Critical points: 0, 4; maximum value 32; minimum value 0
- 3) $f(x) = x^3 - 12x + 1$; $I = [-3, 5]$ 3) _____
A) Critical points: -3, -2, 2, 5; maximum value 66; minimum value 10
B) Critical points: -2, 2; no maximum value; minimum value -15
C) Critical points: -3, -2, 2, 5; maximum value 66; minimum value -15
D) Critical points: -2, 2; maximum value 17; minimum value -15
- 4) $f(r) = \frac{1}{r^2 + 2}$; $I = [-2, 4]$ 4) _____
A) Critical points: -2, 0, 4; maximum value $\frac{1}{2}$; minimum value $\frac{1}{6}$
B) Critical points: -2, 0, 4; maximum value $\frac{1}{2}$; minimum value $\frac{1}{18}$
C) Critical points: 0; maximum value $\frac{1}{2}$; minimum value 0
D) Critical points: -2, 4; maximum value $\frac{1}{6}$; minimum value $\frac{1}{18}$
- 5) $g(t) = t^{2/3}$; $I = [-1, 8]$ 5) _____
A) Critical points: -1, 0, 8; maximum value 4; minimum value 0
B) Critical points: 0; no maximum value; minimum value 0
C) Critical points: -1, 0, 8; maximum value 1; minimum value 0
D) Critical points: -1, 8; maximum value 4; minimum value 3

Answer Key

Testname: FINDING ABSOLUTE MAXIMUM AND ABSOLUTE MINIMUM

- 1) C
- 2) B
- 3) C
- 4) B
- 5) A