

Minimum or Maximum

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

Determine whether there is a maximum or minimum value for the given function, and find that value.

- 1) $f(x) = x^2 - 20x + 106$ 1) _____
A) Minimum: 6 B) Maximum: -6 C) Minimum: 0 D) Maximum: 10
- 2) $f(x) = x^2 + 16x + 62$ 2) _____
A) Minimum: 0 B) Maximum: -2 C) Minimum: -2 D) Maximum: 2
- 3) $f(x) = -x^2 - 18x - 89$ 3) _____
A) Maximum: 8 B) Minimum: 8 C) Minimum: 0 D) Maximum: -8
- 4) $f(x) = -4x^2 - 40x - 106$ 4) _____
A) Minimum: 6 B) Maximum: -6 C) Minimum: 0 D) Maximum: 6

Solve the problem.

- 5) A rock is propelled upward from the top of a building 180 feet tall at an initial velocity of 56 feet per second. The function that describes the height of the rocket in terms of time t is $s(t) = -16t^2 + 56t + 180$. Determine the maximum height that the rock reaches. 5) _____
A) 212 ft B) 191 ft C) 246 ft D) 229 ft
- 6) A rock is propelled upward from the top of a building 90 feet tall at an initial velocity of 120 feet per second. The function that describes the height of the rocket in terms of time t is $s(t) = -16t^2 + 120t + 90$. Determine the maximum height that the rock reaches. 6) _____
A) 276 ft B) 300 ft C) 315 ft D) 330 ft
- 7) The owner of a video store has determined that the cost C , in dollars, of operating the store is approximately given by $C(x) = 2x^2 - 28x + 730$, where x is the number of videos rented daily. Find the lowest cost to the nearest dollar. 7) _____
A) \$338 B) \$828 C) \$534 D) \$632
- 8) The owner of a video store has determined that the cost C , in dollars, of operating the store is approximately given by $C(x) = 2x^2 - 22x + 710$, where x is the number of videos rented daily. Find the lowest cost to the nearest dollar. 8) _____
A) \$589 B) \$468 C) \$771 D) \$650
- 9) The owner of a video store has determined that the profits P of the store are approximately given by $P(x) = -x^2 + 20x + 51$, where x is the number of videos rented daily. Find the maximum profit to the nearest dollar. 9) _____
A) \$200 B) \$100 C) \$251 D) \$151
- 10) The manufacturer of a CD player has found that the revenue R (in dollars) is $R(p) = -5p^2 + 1800p$, when the unit price is p dollars. If the manufacturer sets the price p to maximize revenue, what is the maximum revenue to the nearest whole dollar? 10) _____
A) \$162,000 B) \$324,000 C) \$1,296,000 D) \$648,000

Answer Key

Testname: MINIMUM OR MAXIMUM

- 1) A
- 2) C
- 3) D
- 4) B
- 5) D
- 6) C
- 7) D
- 8) D
- 9) D
- 10) A