

Sketching Quadratic Functions

Use the vertex and intercepts to sketch the graph of the quadratic function.

1) $y + 2 = (x + 4)^2$ 1) _____

2) $f(x) = 4(x - 6)^2 + 4$ 2) _____

3) $f(x) = 1 - (x - 1)^2$ 3) _____

4) $f(x) = x^2 + 2x - 8$ 4) _____

5) $f(x) = -x^2 - 2x + 8$ 5) _____

6) $f(x) = -4x + 3 + x^2$ 6) _____

Determine whether the given quadratic function has a minimum value or maximum value. Then find the coordinates of the minimum or maximum point.

7) $f(x) = 2x^2 - 2x - 8$ 7) _____
 A) minimum; $\left(\frac{1}{2}, -\frac{17}{2}\right)$ B) minimum; $\left(-\frac{17}{2}, \frac{1}{2}\right)$

8) $f(x) = -4x^2 - 12x$ 8) _____
 A) minimum; $\left(\frac{3}{2}, -9\right)$ B) maximum; $\left(-\frac{3}{2}, 9\right)$

Solve the problem.

9) A developer wants to enclose a rectangular grassy lot that borders a city street for parking. If the developer has 300 feet of fencing and does not fence the side along the street, what is the largest area that can be enclosed? 9) _____

A) 16,875 ft² B) 22,500 ft² C) 5,625 ft² D) 11,250 ft²

10) The cost in millions of dollars for a company to manufacture x thousand automobiles is given by the function $C(x) = 4x^2 - 32x + 128$. Find the number of automobiles that must be produced to minimize the cost. 10) _____

A) 4 thousand automobiles B) 8 thousand automobiles
 C) 16 thousand automobiles D) 64 thousand automobiles

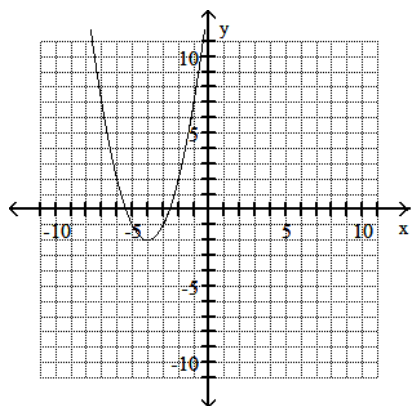
11) The profit that the vendor makes per day by selling x pretzels is given by the function 11) _____

$P(x) = -0.002x^2 + 1.4x - 400$. Find the number of pretzels that must be sold to maximize profit.
 A) 700 pretzels B) 350 pretzels C) 0.7 pretzels D) -155 pretzels

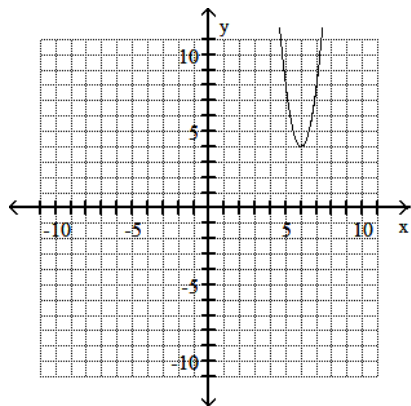
Answer Key

Testname: 15_SKETCHING QUADRATIC FUNCTIONS

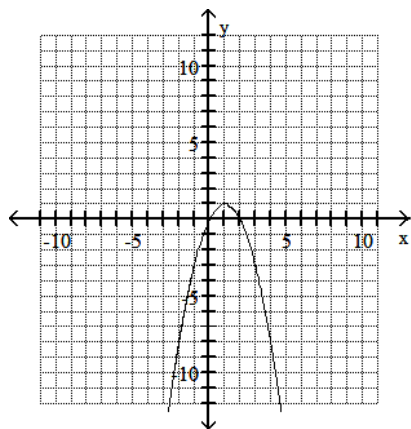
1)



2)



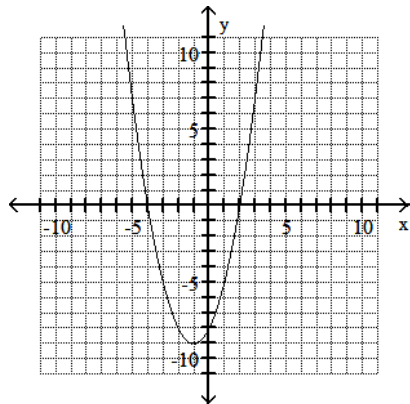
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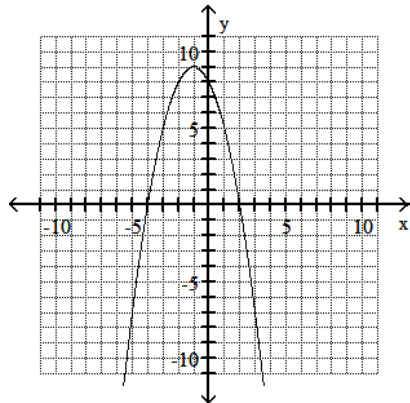
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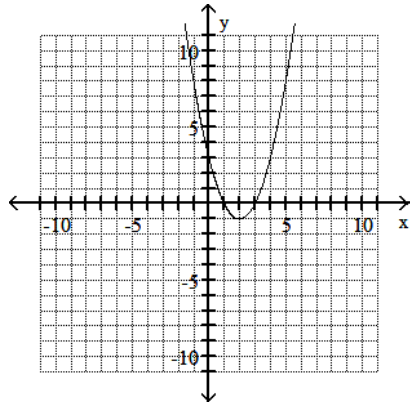
4)



5)



6)



- 7) A
- 8) B
- 9) D
- 10) A
- 11) B