MPS22-HOMEWORK-6

170: 2, 7

171: 22, 26, 30, 35, 42

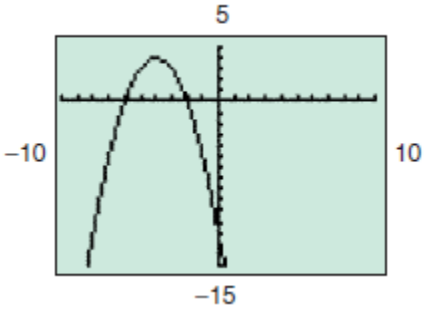
162: 38, 56

161: 30a, b

Select the correct number that corresponds to the right answer. There are more answers than questions. The answers may be repeated.

1) Maximum product is 81; numbers are both −9

2)



3)

$f(x) = -2x^2 + 1$

4)

To minimize perimeter each side should be approximately 15.49 in. long.

5)

$g(x) = (x + 2)^2 - 9$

6)

(2, −5), downward

7)

(5, 2), upward

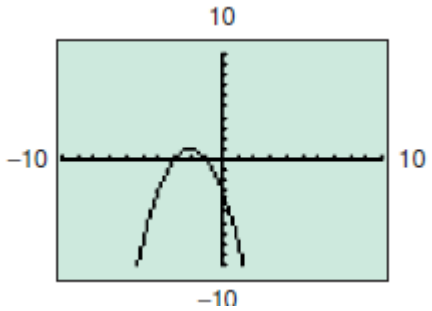
8)

$f(x) = (x - 4)(x + 1)$

9)

Domain: all real numbers; range: all real numbers x such that $x \geq -4$

10)



This function is increasing over the interval $(-\infty, -2)$ and decreasing over the interval $(-2, -\infty)$.

There is a local maximum at the point $(-2, 1)$.

This function is concave down over the interval $(-\infty, \infty)$.

There is no point of inflection.

11)

$f(x) = -\frac{1}{2}x^2 - 4x - 13$

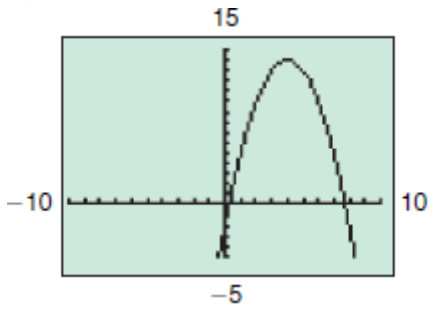
12)

$f(x) = 3x^2 - 3x - 6$

13)

$g(x) = 2\left(x + \frac{5}{2}\right)^2 - \frac{49}{2}$

14)



15)

y-intercept $= 5$
The parabola opens downward.

16)

$$P(x) = 2x + \frac{480}{x}$$