Chapter 2 Review Answers

1) a)function
b) not a function
c) function
d) function
e) not a function

2) a) 35
b) 1
c) $\sqrt{28x^2 - 6x}$
d) $3x^2 + 6xh + 3h^2 - 4x - 4h - 4$
e) $3x^2 - 7x + 5$

3) 8/3 atm

4) a) $(-\infty, \infty)$
b) $(-\infty, -5) U (-5,0) U (0,5) U (5, \infty)$
c) $(-\infty, 10]$
d) $(-7, \infty)$

5) a)$(f + g)(x) = -8x + 15$; $(-\infty, \infty)$
b) $(f - g)(x) = -3x + 1$; $(-\infty, \infty)$
c) $(f \cdot g)(x) = 18x^2 - 40x + 8$; $(-\infty, \infty)$
d) $\frac{f}{g}(x) = \frac{5x+1}{6x-5}$; $\left(-\infty, \frac{5}{6}\right) \cup \left(\frac{5}{6}, \infty\right)$
e) $(f \cdot g)(x) = 8x^5 - 6x^3 - 4x^2 + 3$; $(-\infty, \infty)$
f) $\frac{f}{g}(x) = \frac{\sqrt{x}}{5x-2}$; $\left[0, \frac{2}{5}\right) \cup \left(\frac{2}{5}, \infty\right)$
g) $(f \cdot g)(x) = \frac{2\sqrt{x+5}}{x}$; $[-5, 0) \cup (0, \infty)$
h) $\frac{f}{g}(x) = \frac{3x+5}{4x-1}$; $\left(-\infty, \frac{1}{4}\right) \cup \left(\frac{1}{4}, \infty\right)$

6) a) 7
b) 2(2x + h)
c) 5

7) a) -40
b) positive
c) [-50, 50]
d) [-30, 35]

8) a) even
b) neither
c) odd

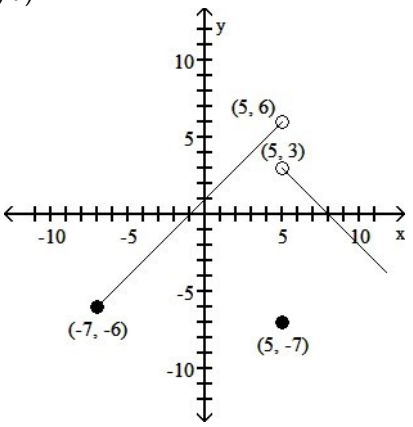
9) a)increasing b)constant c) decreasing

10) f has a local maximum at $x = -8$ and 2.2; the local maximum at -8 is 5; the local maximum at 2.2 is 3.9

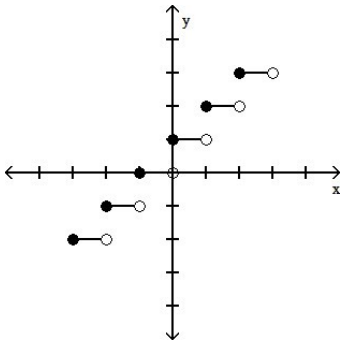
11) Absolute maximum: f(5) = 6; Absolute minimum: f(2) = 1

12) 13

13) a)



b)



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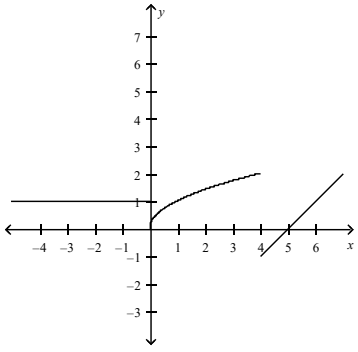
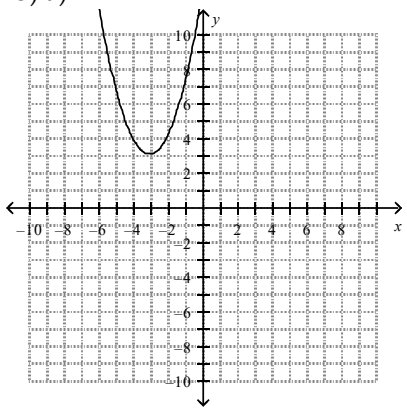


14) a) $y = x^2 + 6$
b) $y = |x + 8|$
c) $y = \sqrt{x - 7}$

15) a)



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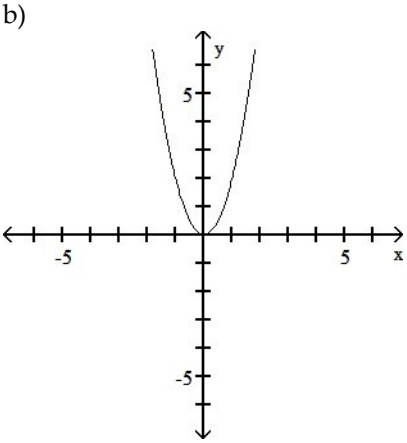

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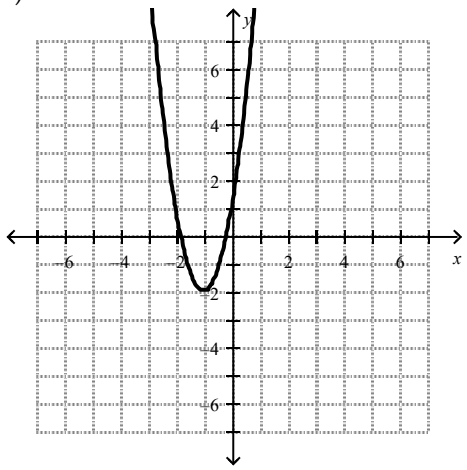

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