

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) $3x^2 + 6xh + 3h^2 + 5x + 5h + 3$

3) $8/3$ atm

- 4) a) all real numbers
 b) $\{x \mid x \neq \sqrt[3]{25}\}$
 c) $\{x \mid x \leq 10\}$
 d) $\{x \mid x > 7\}$

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

- 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

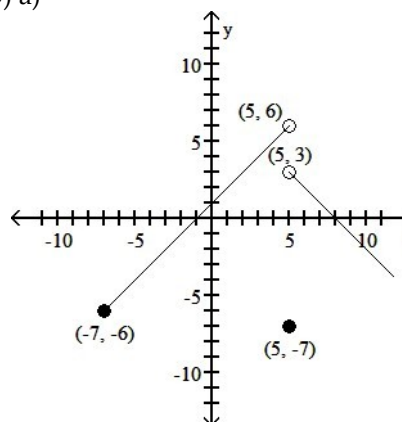
9) increasing

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

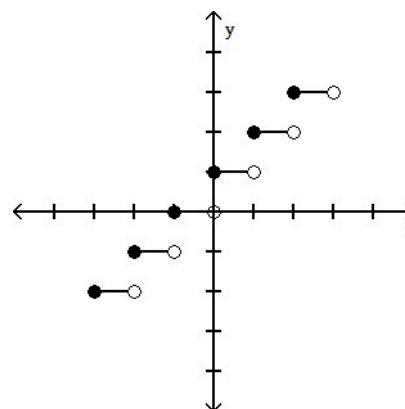
11) Absolute maximum: $f(5) = 6$; Absolute minimum: $f(2) = 1$

12) 13

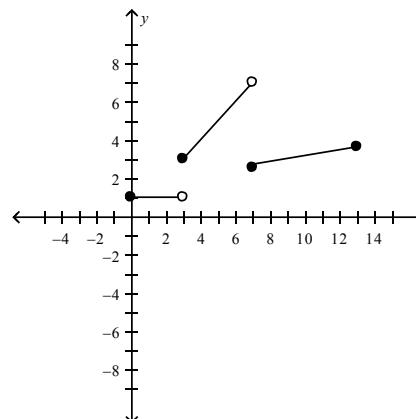
13) a)



b)

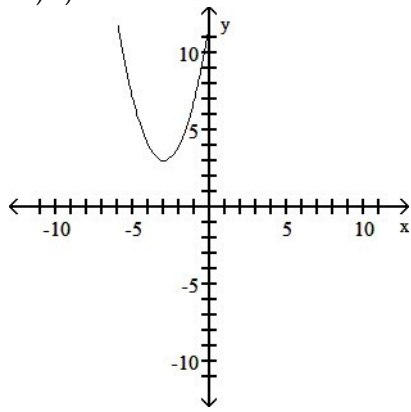


c)

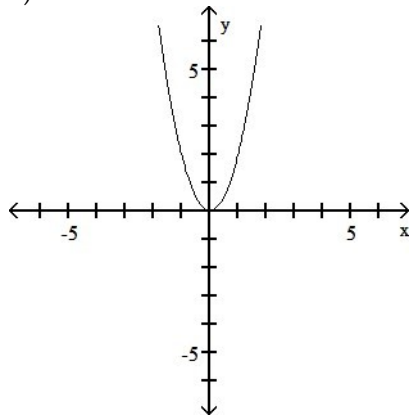


- 14) a) $y = x^2 + 6$
 b) $y = |x| + 8$
 c) $y = \sqrt{x-7}$

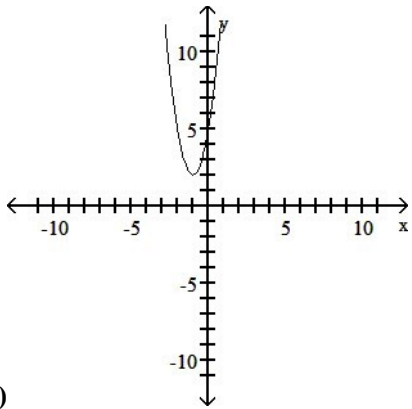
15) a)



b)



c)



16)

