

## Text Answers Sections 1-7

### Section 1

1.  $\frac{2}{3} = .\bar{6}$        $\frac{6}{11} = .\bar{54}$        $\frac{11}{6} = 1.\bar{8}\bar{3}$

2.  $\frac{1}{11} = .\bar{09}$        $\frac{2}{11} = .\bar{18}$        $\frac{3}{11} = .\bar{27}$        $\frac{4}{11} = .\bar{36}$

$\frac{5}{11} = .\bar{45}$        $\frac{6}{11} = .\bar{54}$        $\frac{9}{11} = .\bar{81}$        $\frac{10}{11} = .\bar{90}$

3.  $\frac{1}{9} = .\bar{1}$        $\frac{2}{9} = .\bar{2}$        $\frac{3}{9} = .\bar{3}$        $\frac{4}{9} = .\bar{4}$

$\frac{7}{9} = .\bar{7}$        $\frac{9}{9} = .\bar{9} = 1$

4.  $\frac{23}{17} = 1.\overline{3529411764705882}$

5.  $\frac{23}{1700} = 0.01\overline{3529411764705882}$

7.  $.75 = \frac{75}{100} = \frac{3}{4}$        $45.024 = \frac{45024}{1000} = \frac{5628}{125}$        $\bar{85} = \frac{85}{99}$        $3.\bar{285} = \frac{3253}{990}$

$\overline{.3857} = \frac{3854}{9990} = \frac{1927}{4995}$

### Section 2

1. 2      2.  $\frac{7}{5}$       3.  $-\frac{189}{220}$       4.  $y - 4 = -\frac{2}{3}(x + 1)$       5.  $y + 4 = 3(x - 2)$

6.  $y = 4$       7.  $y - 4 = 2(x + 1)$       8.  $y - 4 = -\frac{1}{2}(x + 1)$       9.  $y - b = k(x - a)$

10.  $y = x + \frac{2}{3}$       11.  $k = -\frac{31}{2}$

### Section 3

1. (a)  $C(x) = .40x + 400$        $R(x) = .50x$        $P(x) = .10x - 400$

(b) \$350 loss      (c) 4,000 copies

2. (a)  $C(x) = 15x + 150$       (b)  $C(x) = 100x + 1237$

3. 15

4. (a)  $C(x) = 2.50x + 50$       (b)  $\frac{100}{7} \Rightarrow 15$       (c)  $\frac{1100}{7} \Rightarrow 158$

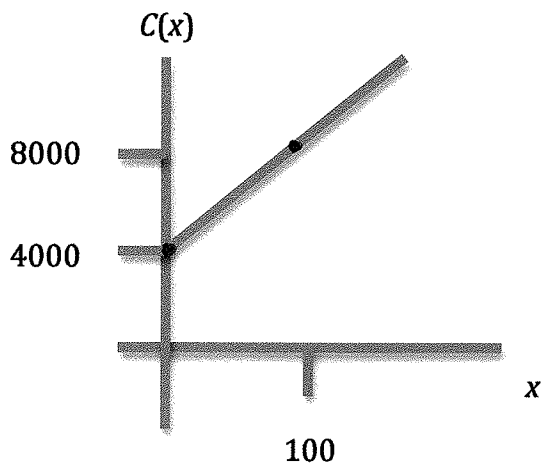
5.  $R(x) = 5x^2 + 20x$

6.  $C(x) = .50x + 10,000$

7. (a) 3                      (b) \$679                      (c)  $\frac{521}{7} \Rightarrow 75$

8. (a)  $m = 17,500$      $y = 17500x - 32500$                       (b)  $\frac{2325}{175} \Rightarrow 14$

9.  $C(x) = 40x + 4000$



10.  $f(x) = 30x$

11.  $f(16.5)$  makes no sense. Since  $x$  represents the number of gallons of gas in the tank and the tank only holds 15 gallons,  $0 \leq x \leq 15$ .

Section 4

1.  $\mathcal{R}$                       2.  $x \neq -\frac{5}{2}$                       3.  $x \neq 0$                       4.  $\mathcal{R}$                       5.  $\mathcal{R}$

6. Empty set (no real numbers are valid in this expression)                      7.  $x > -6$

8. (a)  $x = \frac{-3 \pm \sqrt{9-8}}{2} \Rightarrow x = -1$  or  $x = -2$

(b)  $x = \frac{-2 \pm \sqrt{4+96}}{6} \Rightarrow x = \frac{4}{3}$  or  $x = -2$

(c)  $x = \frac{-5 \pm \sqrt{25+96}}{6} \Rightarrow x = 1$  or  $x = -\frac{8}{3}$

9. (a)  $x \geq \frac{7}{2}$                       (b)  $x \leq 5$                       (c)  $x \neq -2$  and  $x \neq -5$                       (d)  $x \neq -\frac{1}{2}$

(e)  $x \neq 0$                       (f)  $x \neq -6$                       (g)  $x < -1$  or  $x \geq 0$                       (h)  $x \geq 2$  or  $x < -6$

10.  $x \neq 1$  and  $x \neq 3$

Section 5

1. -2      2. 10      3. -4      4. 3      5. 7      6. 5  
7.  $\frac{1}{2+\sqrt{2}}$       8. 0      9. 2      10. 1      11.  $2x$       12. -2

Section 5 Additional Exercises

1. -3      2. 0      3. 8      4. Undefined      5. 6      6. 0

Section 6

1. 0      2. -5      3. -12      4. 95      5.  $\frac{1}{4}$       6.  $y = -\frac{1}{4}x + 1$   
7.  $y = \frac{8}{9}x + \frac{2}{3}$       8.  $x = -2$  or  $x = 6$       9.  $x = -7$  or  $x = 3$

Section 7

1.  $f'(x) = 4$       2.  $f'(x) = 12x - 4$       3.  $f'(x) = 3x^2$        $f'(0) = 0$        $f'(1) = 3$   
4.  $f'(x) = \frac{-8}{x^2}$        $f'(0)$  undefined       $f'(1) = -8$   
5.  $f'(x) = \frac{1}{2\sqrt{x}}$        $f'(0)$  undefined       $f'(1) = \frac{1}{2}$   
6.  $y + 153 = -156(x - 3)$       7.  $y = -\frac{1}{2}x + 2$   
8.  $y - 11\sqrt{5} = \frac{11}{2\sqrt{5}}(x - 5)$       9. (a)  $6p + 2$       (b) 62