

Chapter 1: Real Numbers

Section 1.1 (p.8)

3. (1) f (2) i (3) h (4) c (5) d (6) e (7) g (8) b (9) a (10) j

Section 1.2 (p. 15-16)

- $2^3 \cdot 23$
- $2^2 \cdot 53$
- 1
- 0
- undefined
- $\frac{5}{9}$
- $\frac{2}{5}$
- $\frac{3}{10}$
- $\frac{5}{3}$
- $\frac{39}{7}$
- $\frac{16}{5}$
- $2\frac{2}{3}$
- $11\frac{3}{7}$
- $20\frac{1}{2}$
- $\frac{6}{35}$
- $\frac{5}{3}$
- 9
- $\frac{18}{35}$
- $\frac{9}{25}$
- 2
- 72
- $\frac{6}{7}$
- $\frac{1}{3}$
- $\frac{5}{24}$
- $5\frac{38}{75}$
- $1\frac{37}{60}$

Section 1.3 (p. 20)

- a) irrational, real
b) integers, rational, real
c) rational, real
d) irrational, real
e) whole, integer, rational, real
f) natural, whole, integer, rational, real
- see graph

- (a) > (b) < (c) > (d) = (e) > (f) = (g) > (h) > (i) >
- $\{1, 5, 10, 15, 20\}$, $\{5, 10, 20\}$

Section 1.4 (p. 26)

- (a) 8 (b) -7 (c) -6
- (a) -5.55 (b) $-\frac{1}{15}$ (c) $4\frac{5}{12}$
- (a) -10 (b) 14 (c) 5
- (a) -4.5 (b) $-\frac{11}{14}$ (c) $-2\frac{1}{12}$
- (a) 7 (b) -5.66
- (a) -8 (b) $-\frac{1}{4}$
- 8 floors

Section 1.5 (p. 29)

- (a) -12 (b) 60 (c) $-\frac{1}{4}$
- (a) 10 (b) -18 (c) -4.5
- (a) -4.2 (b) $-\frac{7}{30}$ (c) $\frac{8}{5}$ or $1\frac{3}{5}$
- (a) 72 (b) $-\frac{9}{28}$
- answers may vary

Section 1.6 (p. 34)

- (a) 2^7 (b) $(-1)^3(4)^2(-7)$
- (a) $(-2)^25^3xy^2$ (b) $3^3a^4b^2c$
- (a) 64 (b) -243
- (a) 0 (b) -1
- (a) 1.728 (b) $\frac{16}{81}$
- (a) 25 (b) -25
- (a) -64 (b) -34
- (a) -6 (b) -20
- (a) 11 (b) -22
- $22\frac{1}{6}$

Section 1.7 (p. 40)

- (a) $2x^5, -x^3y^7, 4x^5y, y, -8$ (b) 2, -1, 4, 1, -8
- $x+5$
- $7-3x$
- $7x-2=2x-10$
- $4(x+8)=40$
- $x+x^2=2x-5$
- $x(x+2)=10$
- 12
- 10
- 6

Chapter 2: Algebraic Expressions & Equations

Section 2.1 (p. 45)

1. $36x$
2. $10ab$
3. $60abcd$
4. $-11xyz$
5. $2x+10$
6. $-8x-12y+4z$
7. $-3a+b+5c$
8. $-6x-24y+30z$
9. $2a^2+4a$
10. $-5xy^2+7xy$
11. $-4x^2+15x+5$
12. $7x+6$

Section 2.2 (p. 52-53)

1. No
2. Yes
3. $x=0$
4. $b=11$
5. $y=18$
6. $a=64$
7. $w=\frac{7}{2}$
8. $r=-2$
9. $x=30$
10. $f=16$
11. $k=5$
12. $x=2$
13. $x=-9$
14. $r=-3$
15. $x=\frac{45}{4}$
16. $f=-\frac{12}{5}$
17. $x=-3$
18. $r=-3$
19. $x=\frac{2}{15}$
20. $b=\frac{52}{9}$

Section 2.3 (p. 58-59)

1. $x=12$
2. $x=6$
3. $\frac{1}{3}=\frac{5}{x}, \frac{x}{5}=\frac{3}{1}, \frac{5}{1}=\frac{x}{3}$
4. $x=200mi.$
5. $x=\$8.40$

Section 2.4 (p. 64)

1. $91.44m$
2. $56.78L$
3. $7.72lb.$
4. $26.67^\circ C$

Section 2.5 (p. 68-69)

1. $h=5ft$

2. $w=10m$
3. $r=\frac{D}{t}$
4. $b_1=\frac{2A}{h}-b_2$
5. $x=3d+2w$
6. $w=-\frac{a}{z}$
7. $b=\frac{p-4v}{3}$
8. $y=\frac{2x+h}{-5}$
9. $x=y-\frac{1}{2}z$
10. $z=\frac{7x-2y}{10}$

Section 2.6 (p. 75-76)

1. $[-4, \infty)$
2. $(-\infty, 0)$
3. $(-3, 2)$
4. $(-4, -1]$
5. $x > 5$
6. $y \leq 1$
7. $x \leq -\frac{13}{2}$
8. $w > -\frac{15}{2}$
9. $-10 \leq z \leq 7$
10. $-4 < x < \frac{7}{2}$
11. $-\frac{1}{6} \leq y < 2$
12. $-\frac{7}{2} < b \leq 10$

Section 2.7 (p. 78-79)

1. $\$37.50$
2. $x=478.46$
3. $x=\$235.39$
4. $P=\$500$
5. $length=23m$
6. $x=6$
7. $8x+20=x^2-26$
8. $\frac{miles}{gallons}=\frac{603}{11}=\frac{x}{36}$
9. $r=60mph$
10. Yes

Section 2.7 (p. 84-85)

1. $\$12.00$
2. $\$294.12$
3. $\$1083.33$
4. $r=0.10=10\%$
5. $length=23m$
6. $x=15$
7. $10x-29=42x^2$

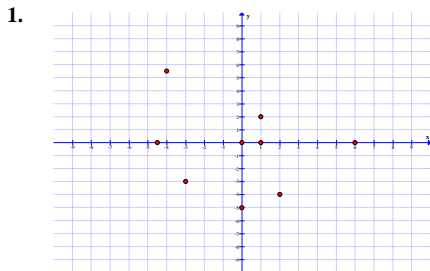
8. $\frac{\text{gallons}}{\text{miles}} = \frac{60}{1200} = \frac{x}{100}$
9. 32.5 nautical miles
10. E

Test 1 Review (p. 90-92)

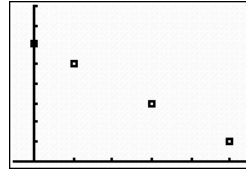
1. -5
2. 8.6
3. 42
4. $\frac{11}{12}$
5. $2\frac{5}{16}$
6. $3\frac{7}{13}$
7. $-2\frac{5}{56}$
8. $x = -2$
9. $y = 10$
10. .
11. 0
12. -25
13. 15
14. -113
15. $y = \frac{35}{9}$
16. $t = \frac{x+8z}{7}$
17. $2x^2 - 5 = 3x + 7$
18. $\frac{705}{19} = \frac{1253}{x}$
19. $x \geq -\frac{4}{3}$
20. 218.72 yd
21. 1.32 gal
22. 45.36 kg
23. 32.22°C
24. \$60
25. \$500
26. \$600
27. $r = 4\%$
28. length = 15m

Chapter 3: Graphing

Section 3.1 (p. 98-99)



2.



The price appears to decrease as the years increase.

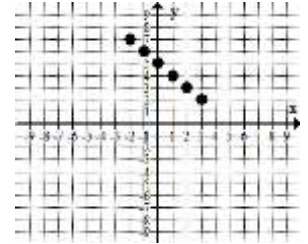
3. 60°, 80°, 75°, January, 60°, August, 83°, June & September

Section 3.2 (p. 104-106)

1. (a) yes (b) no

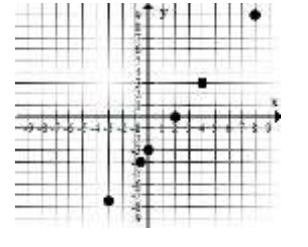
2.

x	y	(x,y)
-2	7	(-2,7)
-1	6	(-1,6)
0	5	(0,5)
1	4	(1,4)
2	3	(2,3)
3	2	(3,2)



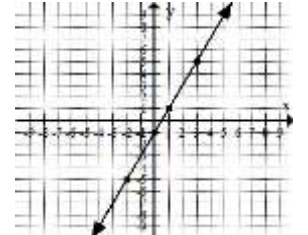
3.

x	y	(x,y)
0	-3	(0,-3)
2	0	(2,0)
4	3	(4,-3)
8	9	(8,9)
-3	-15/2	(-3,-15/2)
-2/3	-4	(-2/3,-4)



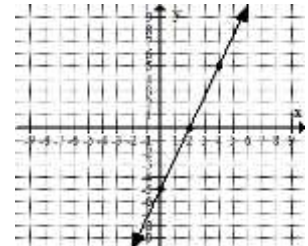
4.

x	y	(x,y)
-2	-5	(-2,-5)
0	-1	(0,-1)
1	1	(1,1)
3	5	(3,5)



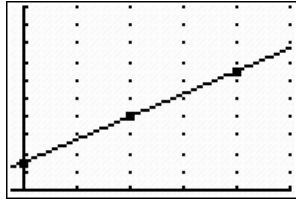
5.

x	y	(x,y)
0	-5	(0,-5)
2	0	(2,0)
-2	-10	(-2,-10)
4	5	(4,5)



6. $y = 0.50x + 30$

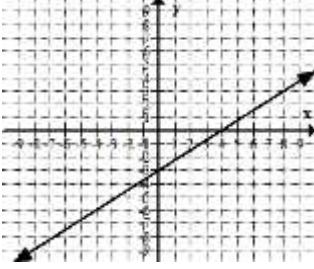
x	y	(x,y)
0	30	(0,30)
100	80	(100,80)
200	130	(200,130)



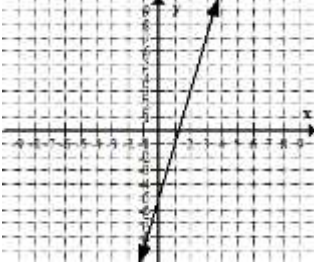
Section 3.3 (p. 109-110)

1. $3x - 4y = 12$ x-

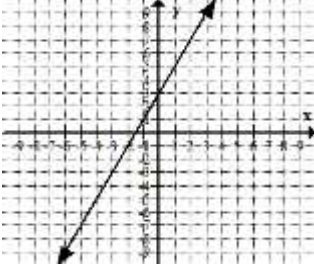
intercept: (4,0) y-intercept: (0,-3)



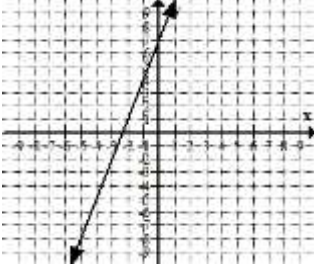
2. $y = 4x - 5$ x-intercept: (5/4,0) y-intercept: (0,-5)



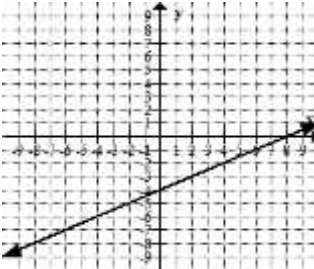
3. $y = 2x + 3$ x-intercept: (-2/3,0) y-intercept: (0,3)



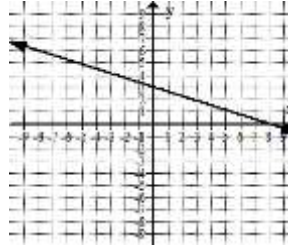
4. $3x = y - 7$ x-intercept: (-7/3,0) y-intercept: (0,7)



5. $y = \frac{1}{2}x - 4$ x-intercept: (8,0) y-intercept: (0,-4)

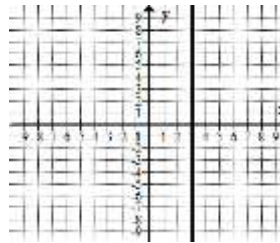


6. $\frac{1}{4}x + \frac{2}{3}y = 2$ x-intercept: (8,0) y-intercept: (0,3)

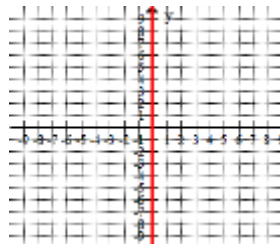


Section 3.4 (p. 116-117)

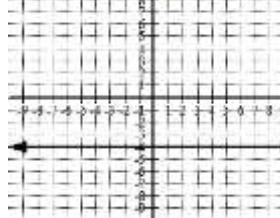
- $m = -1$
- $m = \frac{1}{2}$
- $m = 2$
- $m = \frac{1}{2}$
- $y = 1.50x + 20$; $m = 1.5$
- $m = -3$
- $m = \frac{2}{9}$
- $m = 60$
-



10.



11.

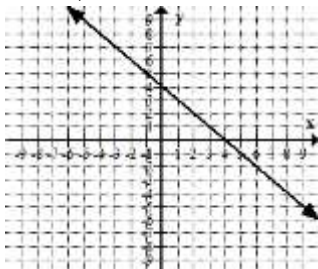


12.

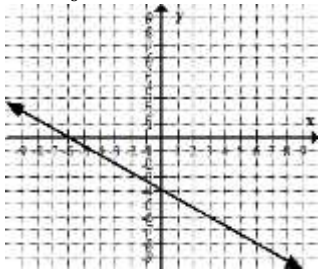


Section 3.5 (p. 127-129)

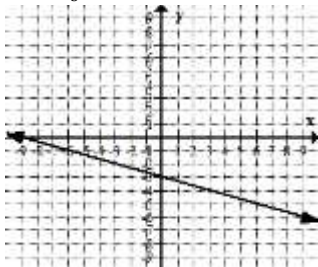
1. $m = 4, b = -3$
2. $m = -\frac{2}{5}, b = 6$
3. $m = \frac{2}{3}, b = -4$
4. $m = -\frac{7}{4}, b = 2$
5. $m = -1, b = 4$



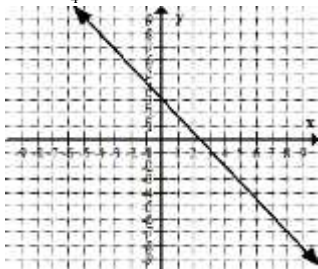
6. $m = -\frac{2}{3}, b = -4$



7. $m = -\frac{1}{3}, b = -3$



8. $m = -\frac{5}{4}, b = 3$



9. $y = 2x - 4$

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

11.
 - a. $y = 10x + 50$
 - b. $m = 10$; The amount that has been saved increases by \$10 per hour worked.
 - c. $b = 50$; Before you had worked any hours, you had saved \$50.
 - d. \$130
 - e. \$210
 - f. 25 hours

Chapter 4: Polynomials

Section 4.1 (p. 137-138)

1. 3^{11}

2. $(-2)^7$
3. a^6
4. $x^{10}y^9$
5. $a^{11}b^4c^7d^7$
6. $(4)^8(-6)^4$
7. $-24x^8y^5$
8. $(5x^2 - 3y)^6$
9. $\theta^8\psi^6\alpha$
10. 7^5
11. $3^3(-8)^2$
12. a^8
13. $2b^5c^8$
14. $\frac{-x^6y}{2z^2}$
15. $a^8b^3c^2$
16. 2^{12}
17. x^{30}
18. $27x^6$
19. $16x^{14}y^{10}z^2$
20. $-32a^{15}b^5c^{25}$
21. $\frac{25a^4b^6}{c^8d^{10}}$
22. $\frac{27a^3}{b^3}$
23. $\frac{x^4y^6}{9}$

Section 4.2 (p. 143-144)

1. 1
2. 1
3. 2
4. 1
5. x
6. $25a^4c^6$
7. $16y^{20}$
8. $\frac{1}{6}$
9. $\frac{1}{x^3}$
10. $\frac{1}{9}$
11. $\frac{1}{x^5}$
12. $25a^3$
13. $\frac{c^3}{a^4b^2}$
14. $\frac{b^3y^7}{-2a^6dx^3z}$
15. $\frac{6x^2}{y}$
16. $\frac{1}{8}$
17. $\frac{y^8}{16x^6}$

18. $\frac{x^{28}y^{36}}{81z^{32}}$

Section 4.3 (p. 147)

- 2.5×10^6
- -4.653×10^{-6}
- 1.2×10^{-3}
- -5×10^9
- 1,300,000
- 0.0000625
- 32,700,000,000
- 0.0000003

Section 4.4 (p. 152-153)

- (a) binomial (b) monomial (c) binomial (d) trinomial (e) polynomial with 4 terms
- (a) $3x^2, -5x, 7$ (b) 3, -5, 7 (c) 2, 1, 0 (d) 2
- (a) $a^6, 9a^5b^3, -2a^{10}b, -8b^3, 3$ (b) 1, 9, -2, -8, 3 (c) 6, 8, 11, 3, 0 (d) 11
- 0
- 3
- 15
- 4
- | x | y |
|----|----|
| -2 | -4 |
| -1 | -6 |
| 0 | -6 |
| 1 | -4 |
| 2 | 0 |

Section 4.5 (p. 156-157)

- $3x^3 - 14x^2 + 13$
- $-3a^2b - 15ab^2 + 5ab + 3a$
- $-5x^2 + 2x - 10$
- $18a - 9$
- $3x^2 + 4x + 4$
- $-2x^2 - 10x + 2$
- $-5x - 3$
- $-4x^2 - 7x + 8$
- $2x^2 - 11x$
- $9x^2y - 12xy^2$
- $2x + 3$
- $17x^3 - 7x^2 + 11x$

Section 4.6 (p. 163-164)

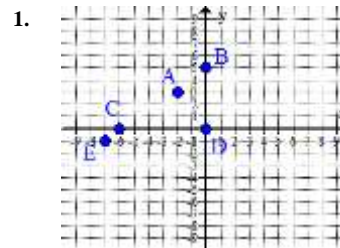
- $3x^8 - 15x^6 + 9x^4 + 2x^3$
- $-12a^7b^6c^3 + 6a^7b^5 - 3a^5b^7 + 3a^2b^4$
- $x^2 + 8x + 15$
- $x^2 + 2x - 63$
- $2x^2 - 5x - 42$
- $12x^2 - 23x + 10$
- $-6x^2 + 5x + 4$

- $-2x^2 + 3x + 27$
- $x^3 - x^2 - 2x + 8$
- $6x^3 - 19x^2 - 11x + 14$
- $x^4 - x^3 - 3x^2 + x + 2$
- $6x^4 - 19x^3 + 5x^2 + 17x - 4$
- $x^2 + 8x + 16$
- $9x^2 - 42x + 49$
- $x^2 - 25$
- $25x^2 - 36$

Section 4.7 (p. 167)

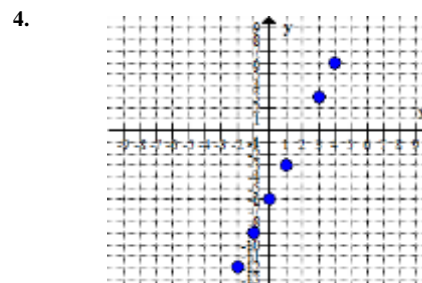
- $\frac{6}{a}$
- $\frac{1}{2x^4y^2z^5}$
- $4x - 5$
- $2x - 3$
- $\frac{1}{3}x^2 - \frac{2}{x^2}$
- $b^3 - \frac{b^2}{3} + \frac{2}{b^2}$
- $\frac{2b^4}{a^3} - a^2b^7 + \frac{5}{3a^2b^3}$
- $2x^2 - \frac{5xy^4}{2} + \frac{1}{3y}$

Test 2 Review (p. 168-172)



- No
- 3.

x	y	(x,y)
-2	-12	(-2, -12)
-1	-9	(-1, -9)
0	-6	(0, -6)
4	6	(4, 6)
1	-3	(1, -3)
3	3	(3, 3)



Chapter 5: Factoring

Section 5.1 (p. 181-182)

- 18
- x^{10}
- $15x^6$
- $12a^5b$
- $12x^3(x^2 - 2)$
- $8a^4b^5(3b + 5a^6)$
- $9ab(2a^2b^6 + 4a^3b - 1)$
- $20x^7y^{10}(2x^3y^5z^7 - y^{20} - 3x^{15})$
- $(x+4)(x+3)$
- $(2x-7)(x^2 - 3x + 2)$
- $(x+y)(a+b)$
- $(x-2)(x+1)$
- $(x-a)(y-z)$
- $(5x+2)(3x-2y)$
- $(a-1)(2a-3b)$
- $2(5x-4)(2x+y)$

Section 5.2 (p. 187-188)

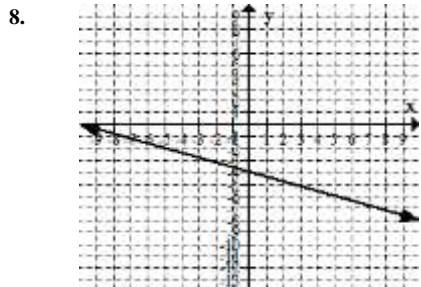
- $(x+3)(x+1)$
- $(x+2)(x+5)$
- $(x-3)^2$
- $(x-2)(x-6)$
- $(x-8)(x+3)$
- $(x-5)(x+4)$
- $(x+6)(x-3)$
- $(x+9)(x-3)$
- $(x-1)^2$
- $(x-7)(x-5)$
- $(x-2)(x+25)$
- prime
- $(x+3)(x+24)$
- $(x-12)(x+3)$
- $-1(x+8)(x-1)$
- $3(x-3)(x+2)$

Section 5.3 (p. 194-195)

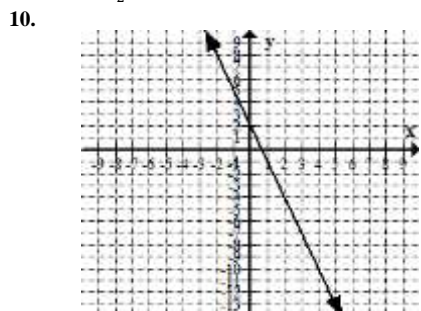
- $(2x+1)(x+3)$
- $(3x+2)(2x+1)$
- $(4x-1)(2x+3)$
- $(3x+4)(2x-3)$
- $(2x-3)(2x+5)$
- $(5x-2)(x-3)$
- $(25x-4)(x+1)$
- $(4x-3)(3x-4)$
- $(4x-7)(5x+1)$
- prime
- $2x(x+5)(x-3)$
- $-3(x-6)(x+3)$

Section 5.4 (p. 200-201)

- $(2, 0)$
- $(0, -4)$
- $m = 3$



9. $y = -\frac{1}{2}x - 1$



- $x^{11}y^4$
- $\frac{5y^6z^2}{x^3}$
- $16x^{11}y^{31}$
- $\frac{y^6}{x^3z^6}$
- $\frac{1}{x^{15}}$
- $\frac{9x^6}{y^6z^{26}}$
- 1.53×10^6
- -0.0025
- $7x^2 - 9x + 9$
- $-6x^6 + 15x^5$
- $-2x^2 + 19x - 24$
- $16x^2 - 40x + 25$
- $5x^4y - 1$
- $xy - \frac{2}{xy^4} + \frac{1}{2x^2}$
- $-52x + 56$
- -12
- $x = 3$
- $y = \frac{33}{8}$
- $b = \frac{1}{2}c - 2a$
- \$500
- $x^2 - 8 = 6x$
- $\frac{1100}{55} = \frac{1925}{x}$

- $(x+4)(x-4)$
- $(5+x)(5-x)$
- $(3x+7)(3x-7)$
- prime
- $-1(x+10)(x-10)$
- $2(x+2)(x-2)$
- $4(x+3)(x-3)$
- $(c+d)(c-d)$
- $(11x+9y^2)(11x-9y^2)$
- $(x+9)^2$
- $(x+10)^2$
- $(2x+7)^2$
- $(x-5)^2$
- prime
- $(3x-2)^2$
- $(5x+6)^2$
- prime
- $(3x-11y)^2$

Section 5.5 (p. 204)

- $7(x+2)(x-2)$
- $2x(x-6)(x-2)$
- $(x+5)(x-5)(a+b)$
- $(x+3)(2x+3)(2x-3)$
- $x(3x+2)(2x-3)$
- $a^2b(c-6)(c-4)$

Section 5.6 (p. 208-209)

- $x = -2, 3$
- $x = -6, 0, \frac{1}{2}$
- $x = 0, 3$
- $x = -2, 0$
- $x = -7, \frac{3}{4}$
- $x = -\frac{3}{2}, -\frac{5}{4}$
- $x = 5, 6$
- $x = -10, 10$
- $x = -\frac{1}{4}, \frac{5}{3}$
- $x = -4, 8$
- $x = -\frac{2}{3}, \frac{5}{2}$
- $x = -\frac{3}{2}, 0, \frac{1}{7}$

Section 5.7 (p. 213-214)

- $\frac{1}{11}$
- $\frac{2}{3}$

- $\frac{7x^2}{2y^2}$
- $\frac{x}{2}$
- x
- $\frac{1}{5x-6}$
- $\frac{x}{x+1}$
- $\frac{x+y}{x+2}$
- $\frac{1}{x-2}$
- $\frac{x+3}{x-3}$
- $\frac{x+4}{x-4}$
- $\frac{2x+1}{2(x-5)}$
- $\frac{3x+4}{x-7}$
- $\frac{3x+1}{4x+3}$

Section 5.8 (p. 220-221)

- $length = 4x + 5 = 45 \text{ ft}$
 $width = 4x - 5 = 35 \text{ ft}$
- $length = 2x + 5 = 13 \text{ ft}$
 $width = 2x + 5 = 13 \text{ ft}$
- $t = 3 \text{ seconds}$
- $t = 1 \text{ second}$

Section 5.9 (p. 227-228)

- $\frac{5}{4}$
- $\frac{a^2}{b^3c^4}$
- $\frac{x+1}{4}$
- $\frac{x(3x+4)}{(x+5)(x-5)}$
- $\frac{2}{3}$
- $\frac{c}{3ab}$
- $\frac{x+2}{2}$
- $\frac{(x-2)(2x+3)}{2x(x+4)}$

Section 5.10 (p. 235-236)

- $\frac{x+y}{3}$
- $\frac{2x}{5y^2}$

3. $\frac{5x^2 + 7}{yz^3}$

4. $\frac{3-x}{3x}$

5. $\frac{y+20}{5y}$

6. $\frac{2-8x}{xy}$

7. $\frac{9y+28x}{12x^3y}$

8. $\frac{5y^2-12x}{10x^2y}$

Test 3 Review (p. 237-241)

1. $2x^6(5-3x^2)$

2. $4vw^2(6v^4w^2+1)$

3. $5x^6y^{15}(9y^{40}+2x^{12}+11x^{18}y^{20})$

4. $(2x+3)(x+4)$

5. $(7x^2+1)(x-3)$

6. $(3y-2z)(5y+2)$

7. $(x+5)(x+6)$

8. $(x-4)^2$

9. $(x-3)(x+2)$

10. $(2c+3)^2$

11. $(3n+2)(3n-5)$

12. $(4x+5)(3x+1)$

13. $(4z+5)(4z-5)$

14. $2(b+c)(b-c)$

15. $x=0; 8$

16. $x=-1; 5$

17. $x=-2; \frac{4}{3}$

18. $x=-1; \frac{1}{4}$

19. $\frac{x-8}{x-7}$

20. $\frac{x+2}{2x-3}$

21. $\frac{(3x+1)(x+5)}{x-1}$

22. $\frac{x+1}{2x-1}$

23. $\frac{15x+6y}{6x^2}$

24. $\frac{3x-14y^3z}{2x^3y^4}$

25. $\frac{8}{3} = \frac{t}{30}$

26. $15x-24$

27. 2.3×10^{-5}

28. $x < 1$

29. a^9b^{16}

30. 15

31. $t = \frac{1}{7}x + \frac{8}{7}z$

32. $(0, -1)$

33. .

34. $length = 24 \text{ ft}$
 $width = 15 \text{ ft}$

Chapter 6: Radicals**Section 6.1 (p. 248-249)**

1. ± 3

2. ± 6

3. ± 10

4. ± 12

5. ± 25

6. ± 100

7. 1.7

8. 5.5

9. 7.1

10. 9.6

11. x^3

12. x^{15}

13. $2x$

14. $9x^2y^6$

15. $10x^4y^9z^5$

16. $12x^{25}y^{100}$

17. $x=5$

18. $x=10$

19. $d=5$

20. $d = \sqrt{58}$

Section 6.2 (p. 256-257)

1. $2\sqrt{7}$

2. $3\sqrt{6}$

3. $10\sqrt{5}$

4. $4\sqrt{3}$

5. $27\sqrt{2}$

6. $6\sqrt{3}$

7. $x\sqrt{x}$

8. $x^4\sqrt{x}$

9. $x^3y^2\sqrt{y}$

10. $x^4\sqrt{x}$

11. x^7

12. $x^8y^8\sqrt{x}$

13. $2x\sqrt{10x}$

14. $7y^5\sqrt{y}$

15. $10x^3y^{10}\sqrt{2y}$

16. $27x^{13}y^{50}\sqrt{x}$

17. $12x^9y^{14}\sqrt{5y}$

18. $30x^3y^7\sqrt{2xz}$

19. $\frac{6}{11}$

$$20. \frac{3a\sqrt{3a}}{2b^5\sqrt{5}}$$

Section 6.3 (p. 260-261)

1. $11\sqrt{3}$
2. $-\sqrt{2} + 9\sqrt{7}$
3. $-3\sqrt{xy} + 4\sqrt{x}$
4. $15\sqrt{3x} + 5x\sqrt{y} - 8\sqrt{y}$
5. $-10abx\sqrt{b} + 2ab\sqrt{b}$
6. $-\sqrt{3}$
7. $7\sqrt{2}$
8. $4\sqrt{3}$
9. $14\sqrt{3}$
10. $21\sqrt{3} - 10\sqrt{2}$
11. $-11\sqrt{3} - 2\sqrt{2}$
12. $11x\sqrt{6}$
13. $20ab\sqrt{3a}$

Section 6.4 (p. 268-269)

1. $4\sqrt{6} - 5\sqrt{3}$
2. $12\sqrt{10} - 3\sqrt{30}$
3. $40 - 35\sqrt{2}$
4. $24\sqrt{5} - 90\sqrt{2}$
5. $4x\sqrt{7} - 12x^3\sqrt{2}$
6. $2x^3\sqrt{6y} - 15x^3y^2\sqrt{x}$
7. $6\sqrt{6} + 10\sqrt{3} + 12\sqrt{2} + 20$
8. $18 - 11\sqrt{2}$
9. $28 + 10\sqrt{3}$
10. $73 - 28\sqrt{6}$
11. $36x\sqrt{5} - 12x + 9x\sqrt{15x} - 3x\sqrt{3x}$
12. $15x^3\sqrt{2y} - 20x^4y\sqrt{3} - x\sqrt{6xy} + 4x^2\sqrt{x}$
13. $3\sqrt{2}$
14. $3x^3\sqrt{5x}$
15. $66 - 40\sqrt{2} \text{ ft}^2$

Section 6.5 (p. 272-273)

1. $\frac{3\sqrt{7}}{7}$
2. $\frac{4\sqrt{11}}{11}$
3. $\frac{\sqrt{6}}{3}$
4. $\frac{9\sqrt{2y}}{2y}$
5. $\frac{\sqrt{10x}}{5}$
6. $\frac{6\sqrt{5xy}}{5xy}$

$$7. \frac{\sqrt{7}}{7}$$

$$8. \frac{\sqrt{3}}{3}$$

$$9. 2$$

$$10. \frac{8\sqrt{6z}}{3z}$$

$$11. \frac{3x\sqrt{2x}}{2}$$

$$12. \frac{6\sqrt{7xyz}}{7xyz}$$

Section 6.6 (p. 278-279)

1. $x = 81$
2. $x = 4$
3. $x = 8$
4. $x = 16$
5. $x = 7$
6. $x = 107$
7. $x = 20$
8. $x = 80$
9. $x = 10$
10. $x = 3$
11. $x = 5$
12. $x = 6$
13. $x = -1$
14. $x = 11$

Section 6.7 (p. 282)

1. 4
2. 3
3. -2
4. x^4
5. xy^4z^6
6. a^2b^5
7. $2\sqrt[3]{3}$
8. $2\sqrt[3]{4}$
9. $2\sqrt[4]{5}$
10. $2x^3y^2\sqrt[3]{9y}$
11. $2x^2y^{10}\sqrt[4]{3x^3z}$
12. $5xy^{10}z\sqrt[3]{2x^2}$
13. $\sqrt[3]{2}$

Test 4 Review (p. 283-288)

1. 11
2. $2\sqrt{5}$
3. $x^3y^5\sqrt{x}$
4. $3xy^4\sqrt{7yz}$
5. $35x^2y^5\sqrt{y}$
6. $30x^2y^{10}z\sqrt{2xz}$
7. $6\sqrt{10}$
8. $30 - 2\sqrt{15}$

9. $4x^2\sqrt{6}-16x^2\sqrt{2x}$
10. $10-6\sqrt{5}$
11. $-6-8\sqrt{3}$
12. $52-16\sqrt{3}$
13. $\frac{5\sqrt{6}}{2}$
14. $\sqrt{6}$
15. 3
16. $2x^2y\sqrt[3]{2y^2}$
17. $5a^2b^3(6a^8b^2+4a^3b^3-1)$
18. $(3x-5)(y+z)$
19. $(x+8)(x-3)$
20. $(5x-2)(2x+5)$
21. $(9x^2-7y^3)(9x^2+7y^3)$
22. $x=-6;7$
23. $x=-\frac{3}{2};-\frac{1}{2}$
24. $\frac{2x-3}{x+1}$
25. 7
26. $b=-\frac{5}{2}c+3a$
27. $(-12,0)$
28. .
29. $x\leq\frac{8}{3}$
30. $\frac{b^{13}}{a}$
31. $4x-x^2=2x+5$
32. *length = 35 ft*
width = 20 ft
33. \$843.75