Review Exercises Used for Fall 2007 Semester with answers.

Exam 1 Review:

Chapter 1 Review page 71: 2, 5-9, 11, 12, 14, 15, 18-29, 37-41, 44-48, 50, 51, 53-63
Chapter 2 Review page 145: 11-15, 19

Answers to Exam 1 Review Problems:

2) *g* $(5-1-3x)$
5) *i* $(2x+14)$
6) *b* $(2x+14=6)$
7) *f* $6x-3=5)$
8) *c* $(6x-3)$
9) *d* $(2(3+x))$
11) $\frac{x}{y}-5$ if *x* and *y* represent the numbers
12) 22
13) {1, 3, 5, 7, 9} and $\{x \mid x$ is an odd number between 0 and 10$\}$
14) 1750 sq. cm
15) 9.3
18) -10.2
19) $-\frac{23}{35}$
20) $\frac{7}{15}$
21) -11.5
22) $-\frac{1}{6}$
23) -5.4
24) 12.6
25) $-\frac{5}{12}$
26) -4.8
27) 6
28) -9.1
29) $-\frac{21}{4}$
36) $7m(n+2)$
37) $4x^3-6x^2+5$
38) $47x-60$
39) $x = 11.6$

40) $a = \frac{27}{2}$

41) $x = -\frac{4}{11}$

44) $2x + 15 = 21$

45) 48

46) 30, 90, and 60 degrees

47) $PS = m$

48) $x = \frac{c}{m - r}$

50) $-12a^6b^8$

51) $4xy^6$

53) 3^5 or 243

54) $125a^6$

55) $-\frac{a^9}{8b^6}$

56) $\frac{z^8}{x^4y^6}$

57) $\frac{b^{16}}{16a^{20}}$

58) $\frac{3}{7}$

59) 0

60) 1.03×10^{-7}

61) 3.086×10^{13} km

62) 3.7×10^7

63) 2.0×10^{-6}

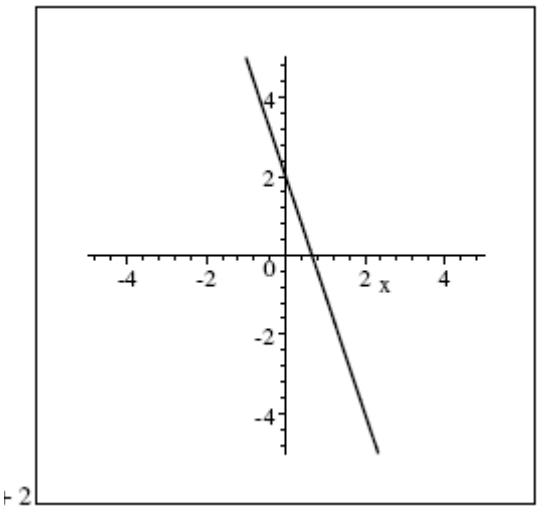
11) yes

12) no

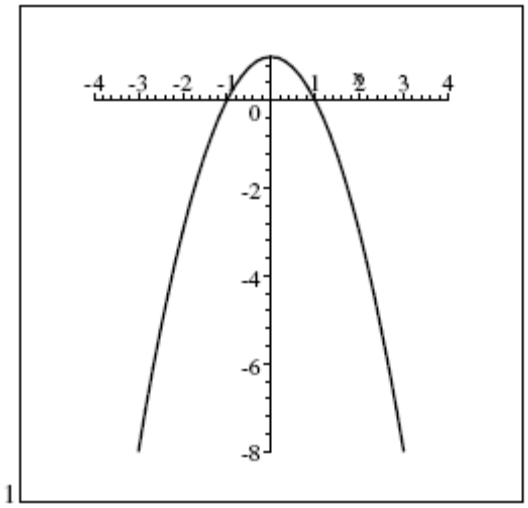
13) yes

14) no

15) points include (0, 2), (1, -1), (-1, 5) and (2, -4)



16) points include (0, 1), (1, 0), (-1, 0), (2, -3), (-2, -3), (3, -8)



Review Exam 2:

Chapter 2 review: pages 144-146, 2, 3, 6, 12, 13, 15-18 all, 20-24 all, 27-32 all, 34, 36- 45 all, 47-49 all, 51

Chapter 3 review: pages 216-217, 1, 2, 4, 5, 7, 11-16 all, 18, 19, 26, 29, 30

Exam 2 Review Problems

Chapter 2 Review

2) False; a vertical line does not have a y-intercept.

3) False; a horizontal line does not have an x-intercept.

6) True

12) no, not a solution

13) yes, is solution

15, 16, 12, 18 (See graphs at end)

20) a) $f(2) = 3$

b) Domain: $\{x \mid -2 \le x \le 4\}$

c) $x = -1$

d) Range: $\{y \mid 1 \le y \le 5\}$

21) median age of cars in 2010 = 10.5 years

22) slope: -4, (0, -9) (See graph at end)

23) slope: $\frac{1}{3}$, $\left(0, -\frac{7}{3}\right)$ (See graph at end)

24) Rate of change is \$7.5 thousand/year or \$7500/year

27) $m = \frac{4}{7}$

28) undefined slope

29) Rate of change is 159,475 homes/month started

30) 645 signifies the average tuition cost is growing by \$645 per year
9800 signifies the average tuition cost in 1997 was \$9800

31) $f(x) = \frac{2}{7}x - 6$

32 (See graph at end)

34) 7 months (See graph at end)

36) linear ($f(x) = \frac{3}{8}x - \frac{7}{8}$)

37) non-linear (square power of variable)

38) non-linear (variable in denominator)

39) $y - 4 = -2(x + 3)$

40) $f(x) = \frac{4}{3}x + \frac{7}{3}$

41) perpendicular

42) parallel

43) a) $R(t) = -0.0215t + 19.75$

b) 2008: about 19.21 seconds, 2013: about 19.105 seconds

44) $y = \frac{3}{5}x - \frac{31}{5}$

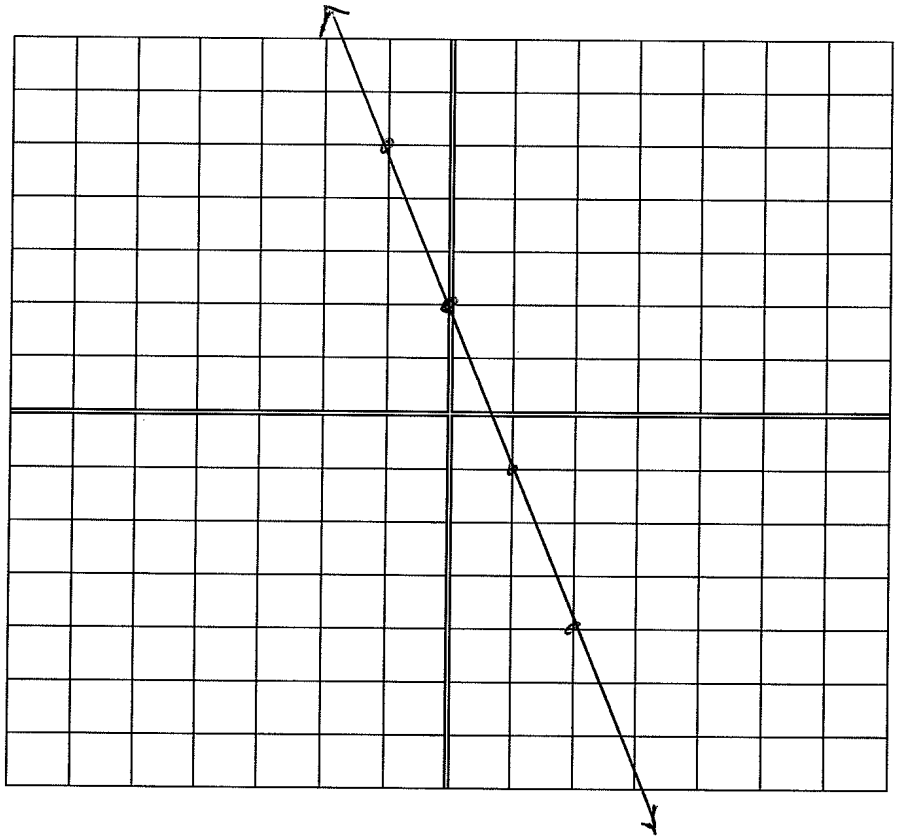
45) $y = -\frac{5}{3}x - \frac{5}{3}$

47) 26
48) 102
49) -17
51) $3a+3b-6$

Chapter 3 Review

1) substitution
2) elimination
4) dependent
5) inconsistent
7) parallel
11) (-2, 1)
12) (3, 2)
13) $\left(-\frac{11}{15},-\frac{43}{30}\right)$
14) no solution
15) $\left(-\frac{4}{5},\frac{2}{5}\right)$
16) $\left(\frac{37}{19},\frac{53}{19}\right)$
18) (2, 2)
19) $\{(x,y)\,|\,3x+4y=6\}$
20) DVD: \$17, videocassette: \$14
21) In 4 hours the passenger train overtakes the freight train.
22) 4 L of 15% juice, 10 L of 8% juice
26) no solution
29) $10\frac{2}{3}$ oz. of lemon juice, $21\frac{1}{3}$ oz. of linseed oil
30) 29 pallets of lumber, 13 pallets of plywood

15



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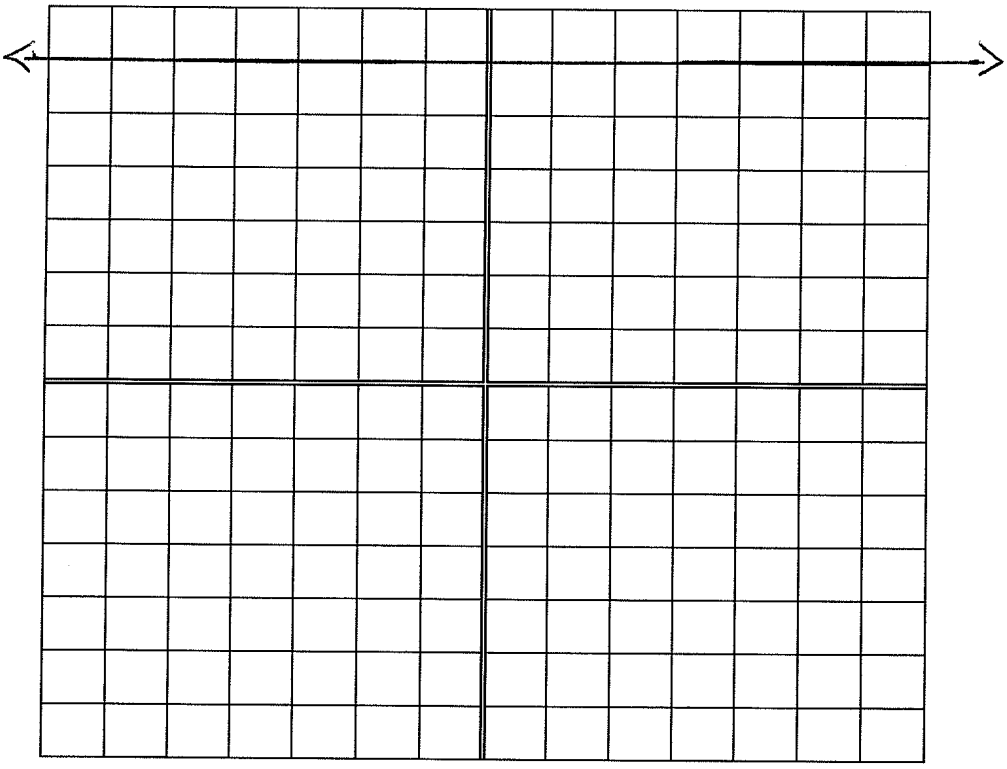

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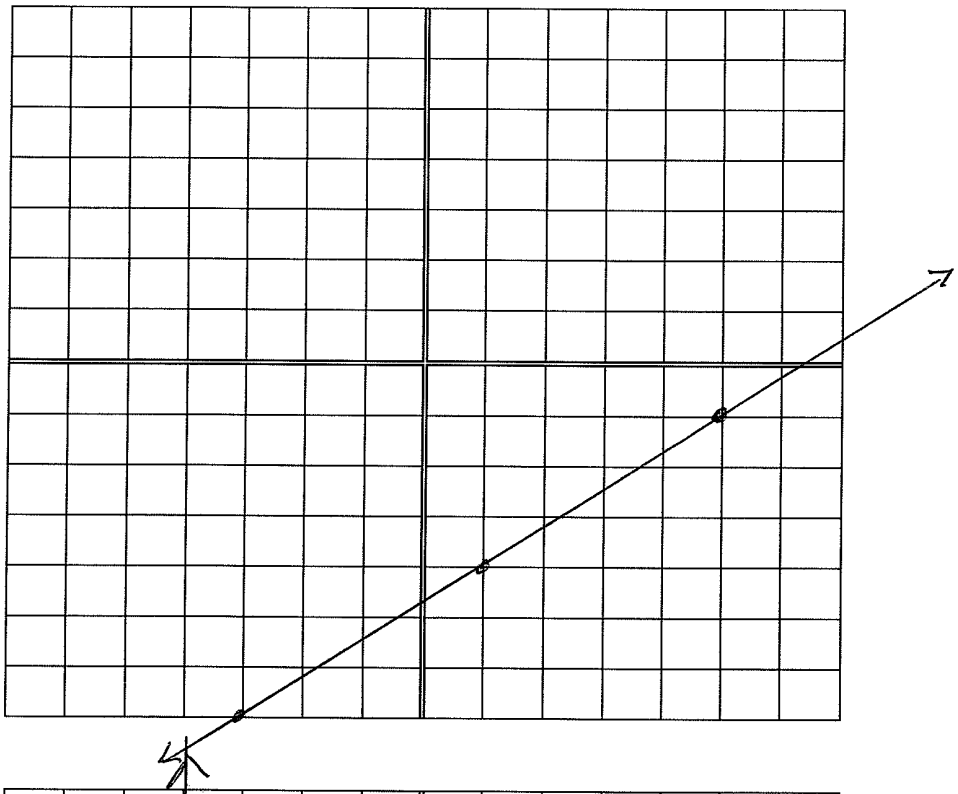

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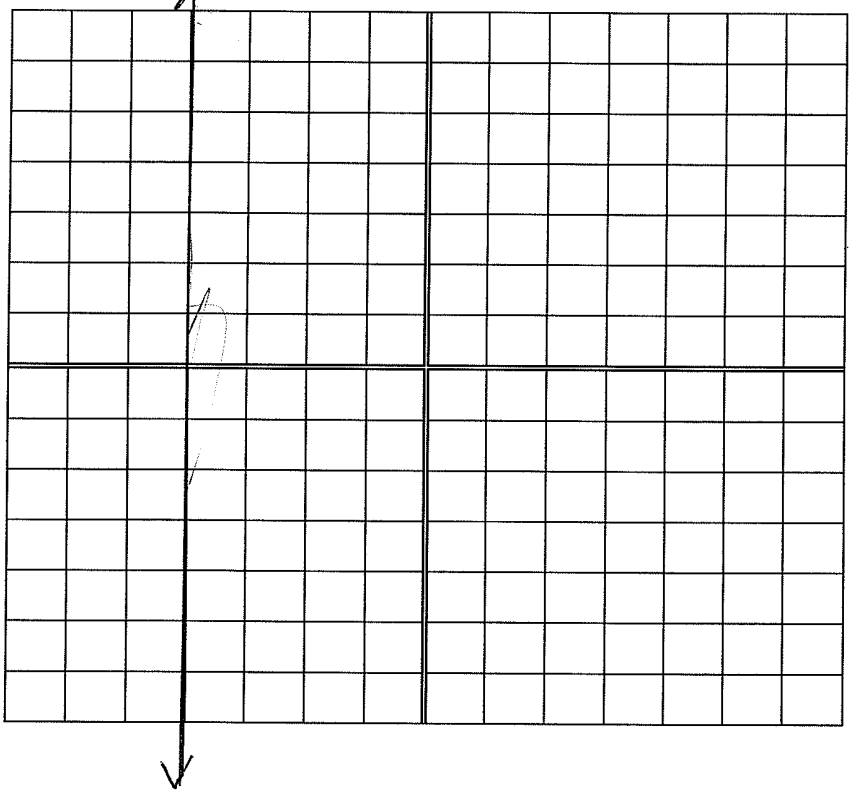

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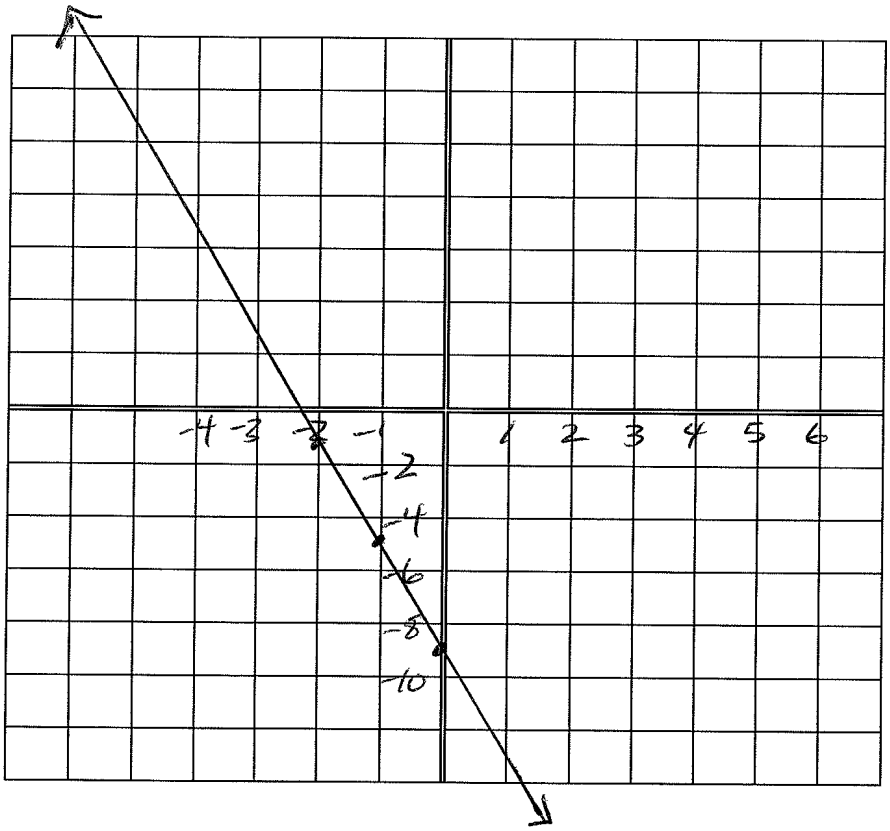

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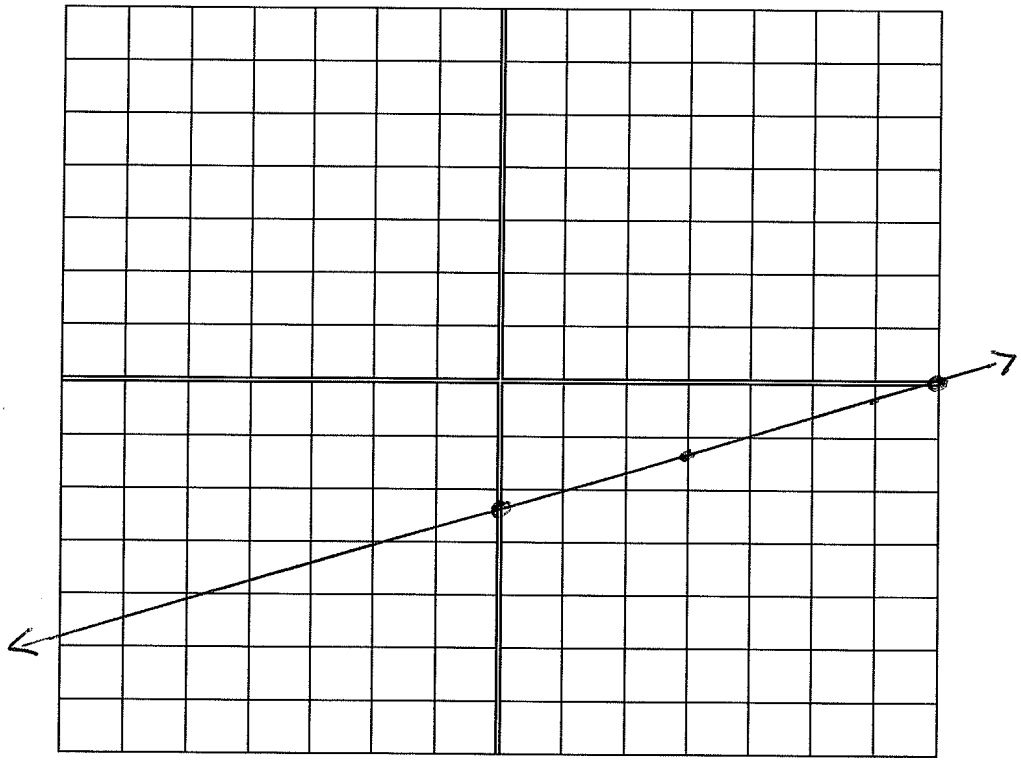

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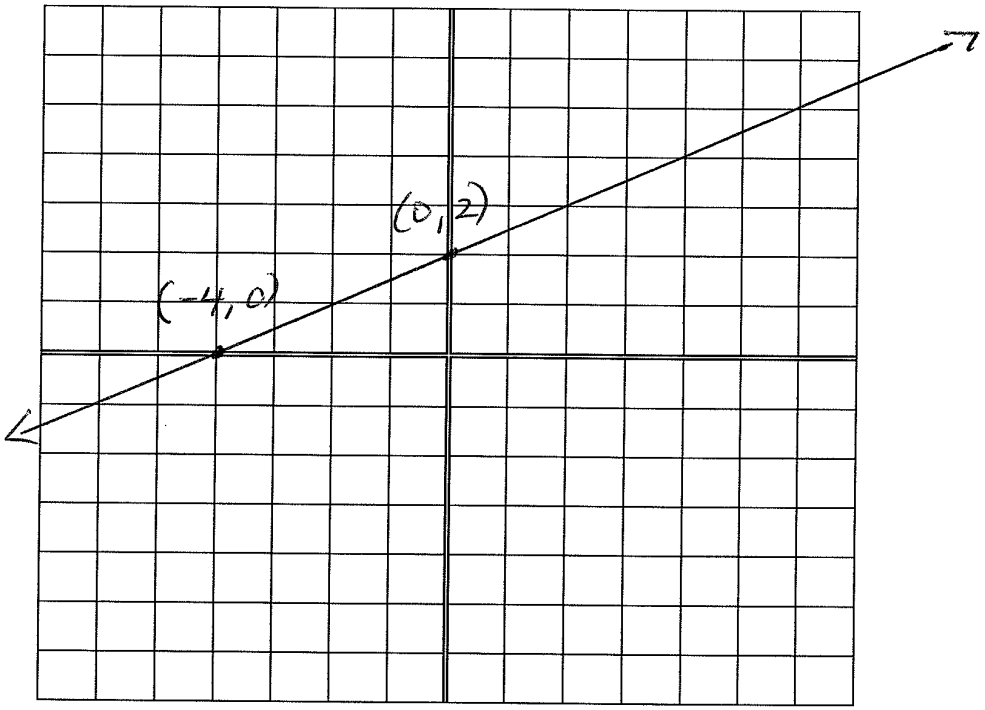

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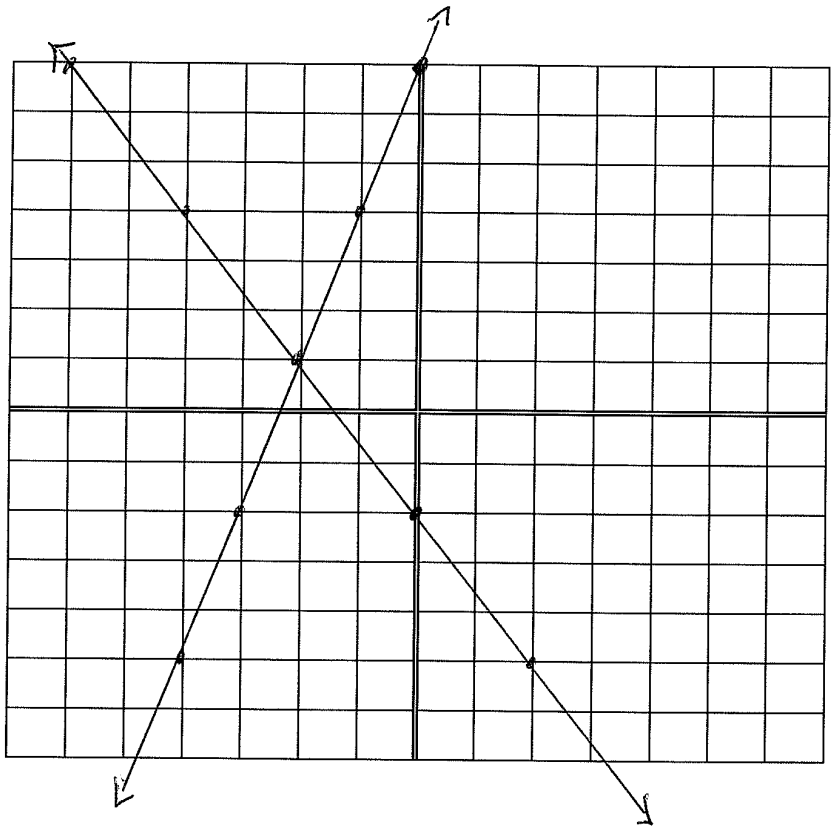
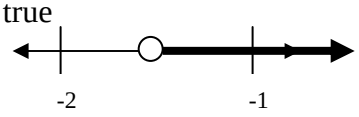


Review Exam 3:

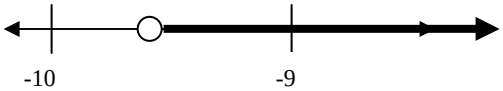
Chapter 4 review: page 274 3, 6, 7, 16, 18, 19, 21, 22, 38, 39, 40, 42, 43, 44
Chapter 5 review: pages 348-349 1, 2, 3,, 10, 11, 12, 14, 17, 19, 23, 24, 26, 27, 28, 29, 32, 34, 35, 36, 37, 38, 39, 40, 43, 47, 50, 51, 54, 56, 57, 58, 59, 62, 63, 64
Chapter 6 review: pages 429-431 2, 7, 10, 11, 12, 13, 14, 15, 19, 20, 21, 22, 30, 32, 33, 35, 36, 37, 38, 48, 49, 50
Chapter 7 *review: page 502 4, 9, 10, 11, 13, 14, 17, 21, 22, 25, 26
*Assume variables in radicals are positive values

Answers for Exam 3 Review Practice Problems

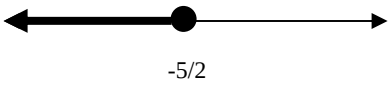
Chapter 4:

3) true
6) true
7) true
16) 

$\{x \mid x > -\frac{3}{2}\}$ $\left(-\frac{3}{2}, \infty\right)$

18) 

$\left\{y \mid y > -\frac{220}{23}\right\}$ $\left(-\frac{220}{23}, \infty\right)$

19) 

$\left\{x \mid x \le -\frac{5}{2}\right\}$ $\left(-\infty, -\frac{5}{2}\right]$

21) more than 125 hours
22) at most \$3000
38) $\{-4,10\}$
39) $\left(-\frac{17}{2}, \frac{7}{2}\right)$
40) $\left(-\infty, -\frac{11}{3}\right] \cup \left[\frac{19}{3}, \infty\right)$
42) no solution
43) $[-16,8]$
44) $(-\infty,0) \cup (10,\infty)$

Chapter 5:

1) *g* $8x^3 - 4x^2 + 12x + 14$
2) *e* $9 - t^2$
3) *j* $4a^2 - 12a + 9$
10) *d* prime
11) degrees of terms: 7, 11, 3, 0 degree of polynomial: 11
12) $-5x^3 + 2x^2 + 3x + 9$; $-5x^3$; -5
14) $P(0) = 0$ $P(-1) = -6$

17) $-x^2y-2xy^2$

19) $-3x^4+3x^3-x+16$

23) $6x^2-7xy+3y^2$

24) $-18x^3y^4$

26) $8a^2b^2+2abc-3c^2$

27) $4x^2-25y^2$

28) $9x^2-24xy+16y^2$

29) $2x^2+5x-3$

32) $x^2-\frac{1}{2}x+\frac{1}{18}$

34) $3y^2(3y^2-1)$

36) $(a-9)(a-3)$

37) $(3m+2)(m+4)$

38) $(5x+2)^2$

39) $4(y+2)(y-2)$

40) $x(x+7)(x-2)$

43) $(a^2+9)(a+3)(a-3)$

47) $y(y^4+1)$

50) $4(3x-5)^2$

51) $(2t+5p)(3t+p)$

54) $\{8\}$

56) $\left\{0,\frac{7}{4}\right\}$

57) $\{-4,4\}$

58) $\{-3,0,7\}$

59) $\{-1,6\}$

62) side is 5 units

63) $-7,-5,-3$ or $3,5,7$

64) width: 5 in.; length: 8 in.

Chapter 6:

2) false

7) true

10) true

11) (a) $-\frac{2}{9}$ (b) $-\frac{3}{4}$ (c) 0

12) LCD = $48x^3$

13) LCD = $(x+5)(x-4)(x-2)$

14) $x+3$

15) $\dfrac{b^2c^6d^2}{a^5}$

19) $\dfrac{x-3}{(x+3)(x+1)}$

20) $\dfrac{x-y}{x+y}$

21) $2(x+y)$

22) $\dfrac{-y}{(y+4)(y-1)}$

30) $x = 2$

32) no solution

33) $x = 0$

35) $5\dfrac{1}{7}$ hours

36) Celeron: 45 seconds; Pentium: 30 seconds

37) boat: 24 mph

38) car: 70 mph; motorcycle: 62 mph

48) about 21.97 pounds daily

49) 64 L

50 $y = \dfrac{3}{4}\left(\dfrac{1}{x}\right)$ or $y = \dfrac{3}{4x}$

Chapter 7:

4) true

9) $\dfrac{7}{3}$

10) -0.5

11) 5

13) $5t$

14) $c + 8$

17) -2

21) $(5ab)^{\frac{4}{3}}$ or $5^{\frac{4}{3}}a^{\frac{4}{3}}b^{\frac{4}{3}}$

22) $8a^4\sqrt{a}$

25) $\dfrac{1}{a^{\frac{2}{5}}}$

26) $7^{\frac{1}{6}}$

Review for Rest of Semester:

Chapter 7 review problems, ps. 502-503 19, 20, 28, 29, 30, 32, 33, 34, 35, 37, 38, 44

Chapter 8 review problems, p. 580 11, 13, 15, 16, 18

Answers

Chapter 7 Review

19) x^3y^2

20) $2x^2$

28) $\sqrt{6xy}$

29) $3a\sqrt[3]{a^2b^2}$

30) $-6x^5y^4\sqrt[3]{2x^2}$

32) $\frac{5\sqrt{x}}{2}$

33) $\frac{2a^2\sqrt[4]{3a^3}}{c^2}$

34) $7\sqrt[3]{x}$

35) $\sqrt{3}$

37) $15\sqrt{2}$

38) $\sqrt{15}+4\sqrt{6}-6\sqrt{10}-48$

44) $y=19$

Chapter 8 Review

11) $x=\frac{3}{2}, x=-\frac{3}{2}$

13) $x=9, x=3$

15) $x=5, x=3$

16) $x=\frac{-9\pm\sqrt{85}}{2}$

18) $x=1,-\frac{1}{4}$