Review Exercises Used for FALL 2008 Semester with answers.

Chapter 1 Review

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

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

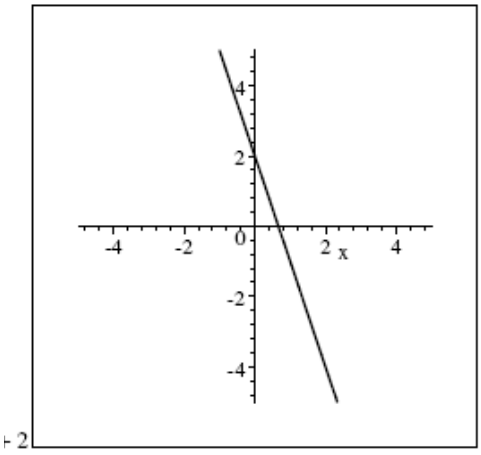
44) $2x + 15 = 21$

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}

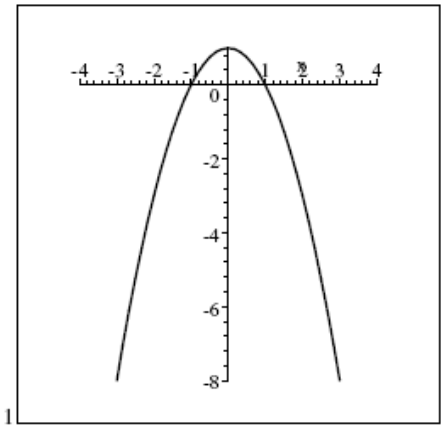
Chapter 2 Review

page 145-146: 11-15, 19, 2, 3, 6, 12, 13, 15-18 all, 20-24 all, 27-32 all, 34, 36- 45 all, 47-49 all, 51

11) yes
12) no
13) yes
14) no
15) points include (0, 2), (1, -1), (-1, 5) and (2, -4)

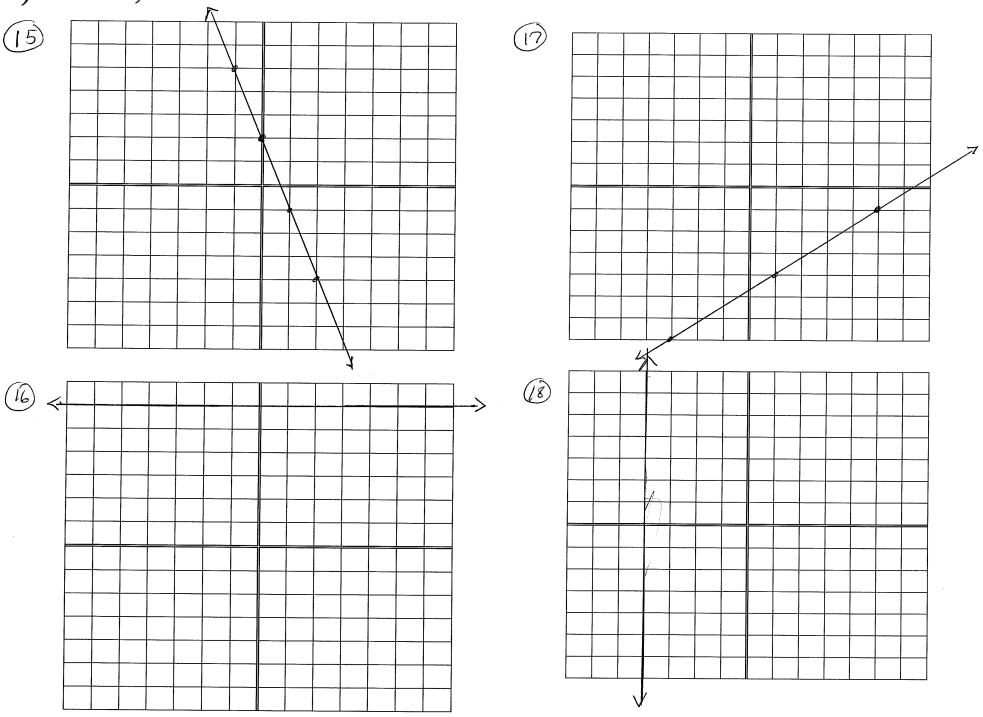


19) points include (0, 1), (1, 0), (-1, 0), (2, -3), (-2, -3), (3, -8)



1

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 a solution



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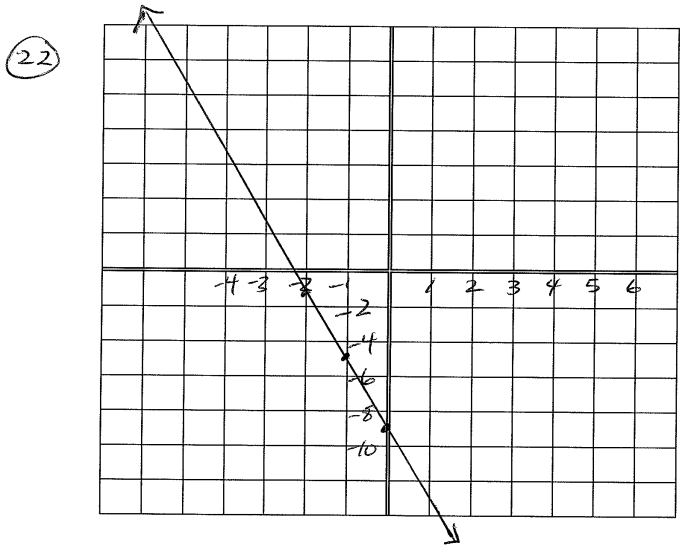
20) a) $f(2) = 3$
b) Domain: $\{x \mid -2 \le x \le 4\}$
c) $x = -1$

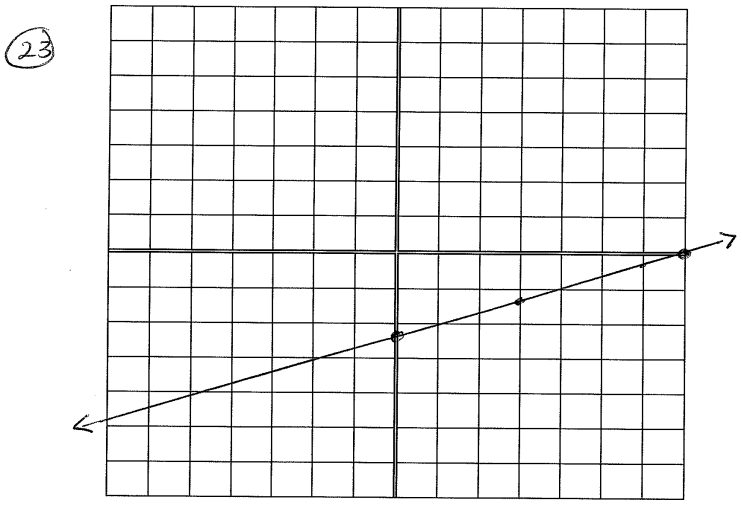
d) Range: $\{y \mid 1 \le y \le 5\}$

21) median age of cars in 2010 = 10.5 years

22) slope: -4, (0, -9)

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





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

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

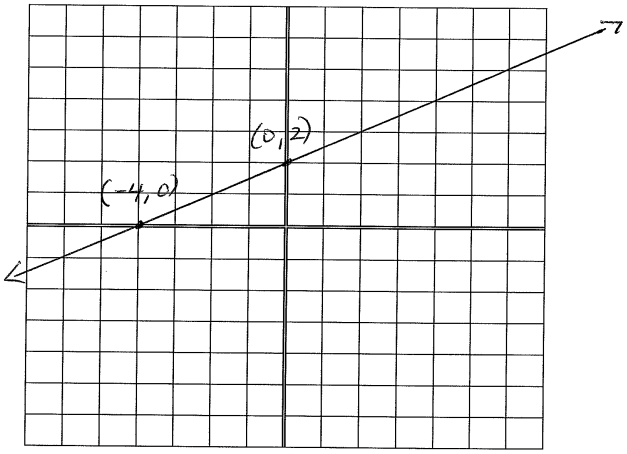
28) undefined slope

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

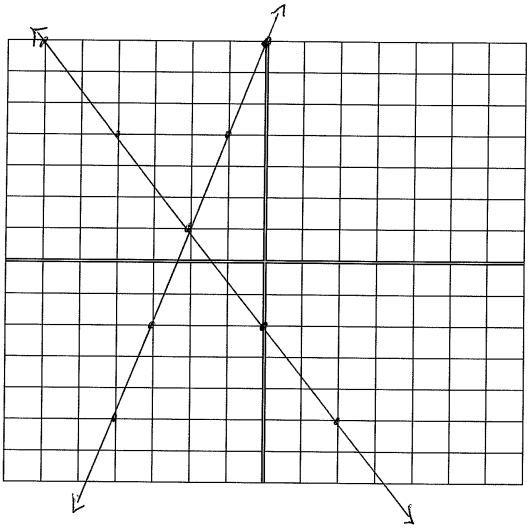
30) 745 signifies the average tuition cost is growing by \$645 per year
9800 signifies the average tuition cost in 1997 was \$9800

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

32)



11)



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34) 7 months

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

Pages 216-217: 1, 2, 4, 5, 7, 11-16 all, 18, 19, 26, 29, 30

1) substitution

2) elimination

4) dependent

5) inconsistent

7) parallel

11) (-2, 1) (for graph see page 5)

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 or 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

Chapter 4 Review

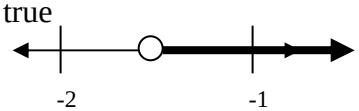
page 274: 3, 6, 7, 16, 18, 19, 21, 22, 38, 39, 40, 42, 43, 44

Chapter 4:

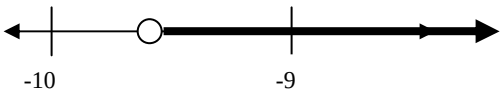
3) true

6) true

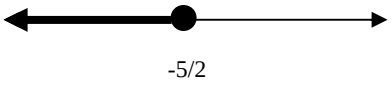
7) true

16) 

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

18) 

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

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 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

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 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

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

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

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

21) $2(x+y)$

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

30) $x = 2$

32) no solution

33) $x = 0$

35) $5\frac{1}{7}$ 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 $y = \frac{3}{4}\left(\frac{1}{x}\right)$ or $y = \frac{3}{4x}$

Chapter 7 Review*

pages 502-503: 4, 9, 10, 11, 13, 14, 17, 21, 22, 25, 26, 19, 20, 28, 29, 30, 32, 33, 34, 35, 37, 38, 44

*Assume variables in radicals are positive values

4) true

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

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

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

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

p. 580: 11, 13, 15, 16, 18

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