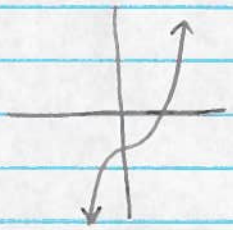
Lesson 1.2.1 (day 1) p. 29-30: 59-64

59. $h(x) = x^3 - 4$

Graph



Table

-3	-31
-2	-12
-1	-5
0	-4
1	-3
2	4
3	23

D: $-\infty < x < \infty$

R: $-\infty < x < \infty$

x-int: (1.59, 0)

y-int: (0, -4)

60a. $\frac{\sin 15^\circ}{1} = \frac{x}{20}$

$x = 20 \sin 15^\circ$

$\boxed{x = 5.17 \text{ m}}$

b. $\frac{\tan 15^\circ}{1} = \frac{5}{x}$

$x \tan 15^\circ = 5$

$x = \frac{5}{\tan 15}$

$\boxed{x = 18.66 \text{ inches}}$

c. $\cos\theta = \frac{10}{11}$

$\theta = \cos^{-1}\left(\frac{10}{11}\right)$

$\boxed{\theta = 24.62^\circ}$

d. $a^2 + b^2 = c^2$

$6^2 + 12^2 = x^2$

$36 + 144 = x^2$

$x^2 = 180$

$\boxed{x = \sqrt{180} \approx 13.42}$

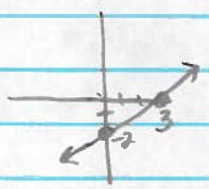
61. $4x - 6y = 12$

a. line b/c both variables are linear

b. $4x - 6y = 12$

$\frac{-6y}{-6} = \frac{-4x + 12}{-6}$

$y = \frac{2}{3}x - 2$



c. x-int (let $y = 0$)

$4x = 12$

$x = 3$ $\boxed{(3, 0)}$

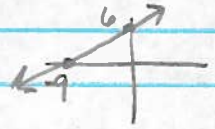
y-int (let $x = 0$)

$-6y = 12$

$y = -2$ $\boxed{(0, -2)}$

d. standard b/c it's easy to solve for x or y when one of them is 0.

e. $2x - 3y = -18$ $-3y = -18$, $y = 6$ (0, 6) $2x = -18$, $x = -9$ (-9, 0)



62a. D: $-1, 1, 2$
R: $-2, 1, 2$

62b. D: $-1 \le x \le 1$
R: $-1 \le y \le 2$

62c. D: $x \ge -1$
R: $y \ge -1$

62d. D: $-\infty < x < \infty$
R: $y \ge -2$

63 $x \cdot \frac{5}{x} = (x-4) \cdot x$

$5 = x^2 - 4x$

$0 = x^2 - 4x - 5$

The error is in line 2 ... both sides need to be multiplied by x.

-5	$-5x$	-5
x	x^2	$1x$
	x	1

$-5x + 1x = -4x$

$(x-5)(x+1)=0$

$\boxed{x=5,\ x=-1}$

64a. $x \cdot \frac{6}{x} = (x-1) \cdot x$

$6 = x^2 - x$

$0 = x^2 - x - 6$

-3	$-3x$	-6
x	x^2	$2x$
	x	2

$3x + (-1x) = 2x$

$(x-3)(x+2)=0$

$\boxed{x=3,\ x=-2}$

64b $x \cdot \frac{9}{x} = x \cdot x$

$\sqrt{9} = \sqrt{x^2}$

$\boxed{x = \pm 3}$

Lesson 1.2.1 (day 2) p. 31: 65-71

65. $f(x) = \frac{1}{x-2}$

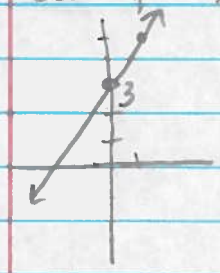
a. $f(2.5) = \frac{1}{2.5-2}$
$= \frac{1}{.5}$
$= \boxed{2}$

b. $f(1.75) = \frac{1}{1.75-2}$
$= \frac{1}{-.25}$
$= \boxed{-4}$

c. $f(2) = \frac{1}{2-0}$
$= \frac{1}{0}$
$= \boxed{\text{undefined}}$

d. division by 0 is undefined

66a. $y = 2x + 3$



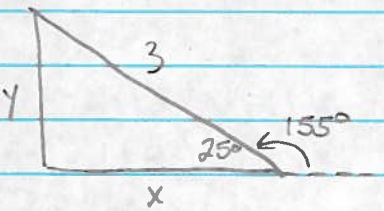
x-int: $0 = 2x + 3$
$-3 = 2x$
$x = -1.5$
$\boxed{(-1.5, 0)}$

y-int: $\boxed{(0, 3)}$

66b. $f(x) = 2x + 3$
Same graph with same x & y int's.

66c. Similar: Same graph, x & y-int's
Different: Notation

67.



$\sin 25° = \frac{y}{3}$
$y = 3 \sin 25°$
$\boxed{y = 1.27 \text{ ft}}$

$\cos 25° = \frac{x}{3}$
$x = 3 \cos 25°$
$\boxed{x = 2.72 \text{ ft}}$

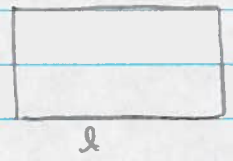
68a. D: -2, -1, 2
R: -1, 0, 1

68b. D: $-1 < x \leq 1$
R: $-1 \leq y < 2$

68c. D: $x > -1$
R: $y > -1$

68d. D: $-\infty < x < \infty$
R: $-\infty < y < \infty$

69.



$l = 4w$
$l + w = 22$

$4w + w = 22$
$5w = 22$
$w = 4.4$ cm
$l = 4(4.4) =$ 17.6 cm

l = length
w = width

70a. $\frac{3}{x} + 6 = -45$
$x \cdot \frac{3}{x} = -51 \cdot x$
$3 = -51x$
$x = -\frac{1}{17}$ or $-.06$

70b. $\frac{x-2}{5} \times \frac{10-x}{8}$
$8(x-2) = 5(10-x)$
$8x - 16 = 50 - 5x$
$13x - 16 = 50$
$13x = 66$
$x = \frac{66}{13}$ or 5.08

70c. $(x+1)(x-3) = 0$
$x = -1, \quad x = 3$

71. $f(x) = x^2 - 2x + 6$ and $g(x) = 2x + 11$

a. $x^2 - 2x + 6 = 2x + 11$
$x^2 - 4x - 5 = 0$

-5	$-5x$	-5
x	x^2	$1x$
	x	1

$-5x^2$, $-5x$, $1x$, $-4x$

$(x-5)(x+1) = 0$
$x = 5, \quad x = -1$
$2(5) + 11 = 21 \Rightarrow (5, 21)$
$2(-1) + 11 = 9 \Rightarrow (-1, 9)$

b. $f(x) + g(x) = (x^2 - 2x + 6) + (2x + 11)$
$x^2 + 17$

c. $f(x) - g(x) = (x^2 - 2x + 6) - (2x + 11)$
$= x^2 - 2x + 6 - 2x - 11$
$= x^2 - 4x - 5$

Lesson 1.2.1 (day 3) p.32: 72-77

72a. $y = \frac{3}{5}x + 1$

$\frac{5}{3}(y-1) = \frac{3}{5}x \cdot \frac{5}{3}$

$\boxed{x = \frac{5(y-1)}{3}}$

72 b. $3x + 2y = 6$

$3x = 6 - 2y$

$\boxed{x = \frac{6-2y}{3}}$

72c. $\sqrt{y} = \sqrt{x^2}$

$\boxed{x = \pm\sqrt{y}}$

72d. $y = x^2 - 100$

$\sqrt{y+100} = \sqrt{x^2}$

$\boxed{x = \pm\sqrt{y+100}}$

73. let x = radius

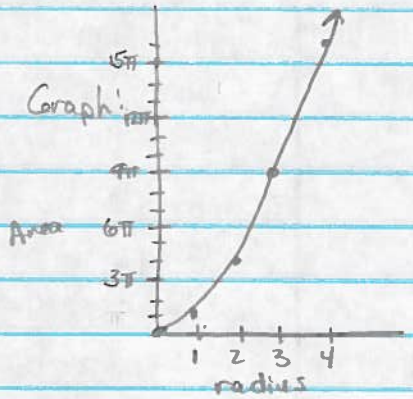
y = area

Eq'n: $y = \pi x^2$

Table:

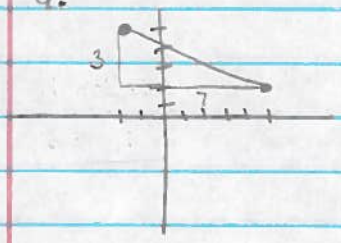
x	y
0	0
1	π
2	4π
3	9π
4	16π

Graph:



74. (-2, 5) and (5, 2)

a.



$a^2 + b^2 = c^2$

$3^2 + 7^2 = c^2$

$9 + 49 = c^2$

$c^2 = 58$

$\boxed{c = \sqrt{58} \text{ or } 7.62}$

b. $m = \frac{\text{rise}}{\text{run}}$

$\boxed{m = \frac{-3}{7}}$

75. set the function equal to 1, then solve

$x^2 + 2x + 1 = 1$

$x^2 + 2x = 0$

$x(x+2) = 0$

$\boxed{x = 0 \quad x = -2}$

76. y-int is where $x=0$

a. $y = 3x + 6$

$y = 3(0) + 6$

$y = 6$

$\boxed{(0, 6)}$

b. $x = 5y - 10$

$0 = 5y - 10$

$10 = 5y$

$y = 2$

$\boxed{(0, 2)}$

c. $y = x^2$

$y = 0^2$

$y = 0$

$\boxed{(0, 0)}$

d. $y = 2x^2 - 4$

$y = 2(0)^2 - 4$

$y = -4$

$\boxed{(0, -4)}$

e. $y = (x-5)^2$

$y = (0-5)^2$

$y = 25$

$\boxed{(0, 25)}$

f. $y = 3x^3 - 2x^2 + 13$

$y = 3(0)^3 - 2(0)^2 + 13$

$y = 13$

$\boxed{(0, 13)}$

77. $3x + 2 = 10 - 4(x - 1)$

$3x + 2 = 10 - 4x + 4$

$3x + 2 = 14 - 4x$

$7x + 2 = 14$

$7x = 12$

$\boxed{x = \frac{12}{7}}$

error is in line 2... you must distribute before you subtract from 10.

Lesson 1.2.2 (day 1) p. 38-39: 84-90

84. $f(x) = 2x^2 - 3x + 4$ and $g(x) = x^2 + 5x - 3$

$2x^2 - 3x + 4 = x^2 + 5x - 3$

$x^2 - 8x + 7 = 0$

-7	$-7x$	7
x	x^2	$-1x$
	x	-1

$7x^2$, $-7x$, $-1x$, $-8x$

$(x-7)(x-1) = 0$

$x = 7 \quad x = 1$

$(7)^2 + 5(7) - 3 = 49 + 35 - 3 = 81 \Rightarrow \boxed{(7, 81)}$

$(1)^2 + 5(1) - 3 = 1 + 5 - 3 = 3 \Rightarrow \boxed{(1, 3)}$

85a. $-2(x+4) = 35 - (7 - 4x)$

$-2x - 8 = 35 - 7 + 4x$

$-2x - 8 = 28 + 4x$

$-8 = 28 + 6x$

$-36 = 6x$

$\boxed{x = -6}$

85b $\frac{x-4}{7} \times \frac{8-3x}{5}$

$5(x-4) = 7(8-3x)$

$5x - 20 = 56 - 21x$

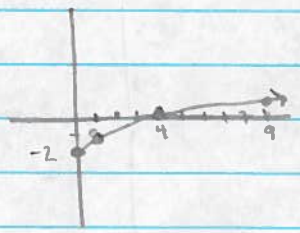
$26x - 20 = 56$

$26x = 76$

$x = \frac{76}{26} = \boxed{\frac{38}{13} \text{ or } 2.92}$

86. $f(x) = \sqrt{x} - 2$

x	y
0	-2
1	-1
4	0
9	1
16	2

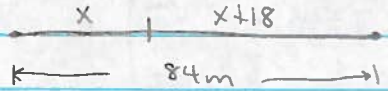


x-int: (4, 0)

y-int: (0, −2)

D: $x \geq 0$

R: $y \geq -2$

87. 

x = length of short cable

$x + x + 18 = 84$

$2x + 18 = 84$

$2x = 66$

$\boxed{x = 33 \text{ m}}$

$33 + 18 = \boxed{51 \text{ m}}$

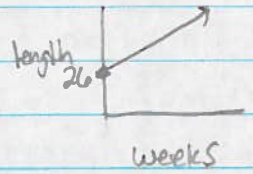
88a. x = weeks

y = length of snake

Table

x	y
0	26
1	28
2	30
3	32
4	34

Graph



Eq'n

$y = 26 + 2x$

88b. $100 = 26 + 2x$

$2x = 74$

$\boxed{x = 37 \text{ wks}}$

89. x-int is when $y = 0$

a. $y = 3x + 6$

$0 = 3x + 6$

$-6 = 3x$

$x = -2$

$\boxed{(-2, 0)}$

b. $x = 5y - 10$

$x = 5(0) - 10$

$x = -10$

$\boxed{(-10, 0)}$

c. $y = x^2$

$\sqrt{0} = \sqrt{x^2}$

$x = 0$

$\boxed{(0, 0)}$

d. $y = 2x^2 - 4$

$0 = 2x^2 - 4$

$4 = 2x^2$

$\sqrt{x^2} = \sqrt{2}$

$x = \pm\sqrt{2}$

$\boxed{(\pm\sqrt{2}, 0)}$

e. $y = (x-5)^2$

$\sqrt{0} = \sqrt{(x-5)^2}$

$x - 5 = 0$

$x = 5$

$\boxed{(5, 0)}$

f. $y = x^3 - 13$

$0 = x^3 - 13$

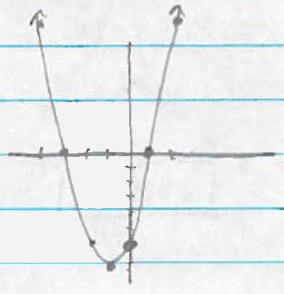
$\sqrt[3]{13} = \sqrt[3]{x^3}$

$x = \sqrt[3]{13}$

$\boxed{(\sqrt[3]{13}, 0)}$

90. $h(x) = 2x^2 + 4x - 6$

x	y
0	-6
1	0
2	10
-1	-8
-2	-6
-3	0
-4	10



$V(-1, -8)$

$\boxed{\begin{array}{l} D: -\infty < x < \infty \\ R: y \geq -8 \end{array}}$

Lesson 1.2.2 (day 2) 91-97

91a. $y = mx + b$ for x

$y - b = mx$

$\boxed{x = \frac{y-b}{m}}$

91b $A = \pi r^2$ for r

$\sqrt{r^2} = \sqrt{\frac{A}{\pi}}$

$\boxed{r = \pm\sqrt{\frac{A}{\pi}}}$

91c. $V = LHW$ for W

$\boxed{W = \frac{V}{LH}}$

91d. $2x + \frac{1}{y} = 3$ for y

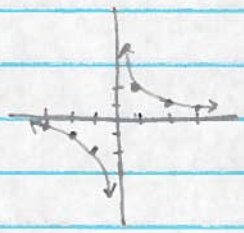
$y \cdot \frac{1}{y} = (3 - 2x) \cdot y$

$1 = (3-2x)y$

$\boxed{y = \frac{1}{3-2x}}$

92. $g(x) = \frac{2}{x}$

-3	-.67
-2	-1
-1	-2
0	undefined
1	2
2	1
3	.67



Summary statement 1: D: $x \neq 0$

- Table shows undefined at $x=0$
- Graph shows an asymptote at $x=0$
- $\frac{2}{0}$ is undefined in the function

Summary statement 2: R: $y \neq 0$

- Tables show + & − #'s, but not 0
- Graph shows asymptote at $y=0$
- $0 = \frac{2}{x}$ Can't be solved for x

Summary statement 3: NO y-int

- Table is undefined when $x=0$
- Graph doesn't cross y-axis
- function is undefined when $x=0$.

93. $y = 3x + 15$ and $y = 3 - 3x$ (use Equal values)

$3x + 15 = 3 - 3x$

$6x + 15 = 3$

$6x = -12$

$x = -2$

$y = 3(-2) + 15$

$y = -6 + 15$

$y = 9$

$\boxed{(-2, 9)}$

94. $\frac{5}{8} \times \frac{x}{12}$

$8x = 60$

$x = \frac{60}{8}$

$\boxed{x = \frac{15}{2} \text{ or } 7.5 \text{ ft}}$

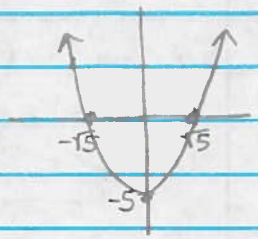
95. $h(x) = x^2 - 5$

$0 = x^2 - 5$

$\sqrt{5} = \sqrt{x^2}$

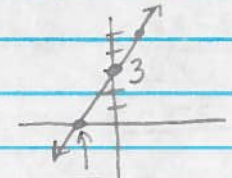
$x = \pm\sqrt{5}$

$\boxed{(\pm\sqrt{5}, 0)}$



96a. $y - 2x = 3$

$y = 2x + 3$



$\boxed{(-\frac{3}{2}, 0)}$

96b. $y - 3 = x^2$

$y = x^2 + 3$

$\boxed{\text{No x-int}}$

96c. x-int: $-2x = 3$

$x = -3/2$ $\boxed{(-\frac{3}{2}, 0)}$

y-int: $\boxed{(0,3) \text{ for both}}$

96d. ~~$2x + 3 = x^2 + 3$~~

$0 = x^2 - 2x$

$0 = x(x-2)$

$x = 0 \quad x = 2$

$y = 2(0) + 3 = 3$

$\boxed{(0,3)}$

$y = 2(2) + 3$

$= 4 + 3$

$= 7$

$\boxed{(2,7)}$

97a. Quadratic Formula

b. Law of Sines

c. Pythagorean Theorem

d. Law of Cosines

Lesson 1.2.3 p. 43 104-110

104. $3x + 4y = 12$

$4y = -3x + 12$

$y = \frac{-3}{4}x + 3$

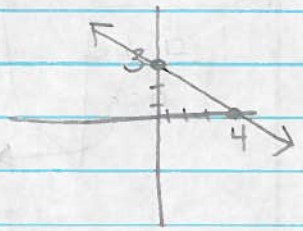
slope = $\frac{-3}{4}$

y-int: (0, 3)

x-int: (4, 0)

$3x = 12$

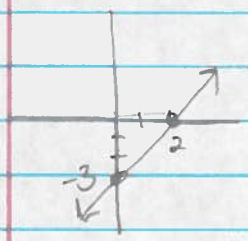
$x = 4$



105. (2, 0) and (0, -3)

$m = \frac{3}{2}$

y-in = (0, -3)



Eq'n: $y = \frac{3}{2}x - 3$

106a. $x^2 + 3x - 3 = 0$

$a = 1, b = 3, c = -3$

$x = \frac{-3 \pm \sqrt{(3)^2 - 4(1)(-3)}}{2 \cdot 1}$

$x = \frac{-3 \pm \sqrt{21}}{2}$, $x = .79$, $x = -3.79$

106b. $3x^2 - 7x = 12$

$3x^2 - 7x - 12 = 0$

$a = 3, b = -7, c = -12$

$x = \frac{7 \pm \sqrt{(-7)^2 - 4 \cdot 3 \cdot -12}}{2 \cdot 3}$

$x = \frac{7 \pm \sqrt{193}}{6}$, $x = 3.48$, $x = -1.15$

107. $\frac{3}{2} \times \frac{17}{x}$

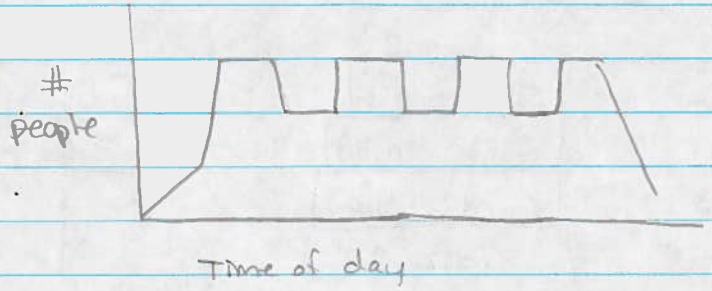
$3x = 34$

$x = \$11.33$ ← if he could just buy 17 songs

but since he has to buy a full package, he will need to purchase 6 packages

so, 6 packages * $2 = $12

108



less people in the building during lunch shifts.

109a. D: $-3 \leq x < 3$ R: $y = -2, 1, 3$

109b. D: $x = 2$ R: $-\infty < y < \infty$

109c. D: $x \geq -2$ R: $-\infty < y < \infty$

110a. possible outcomes are 1, 2, 3, 4, 5, 6

b. $p(4) = \frac{1}{6}$

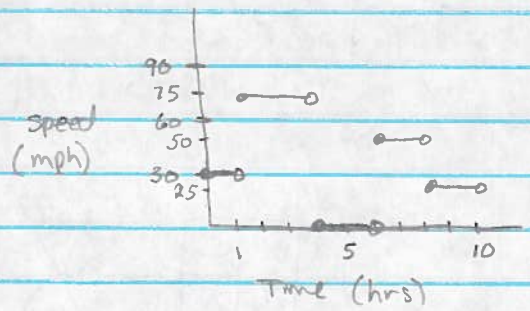
c. P(less than 5) $= \frac{4}{6}$ or $\frac{2}{3}$

Lesson 1.2.4 112-118

112a. Each segment represents a portion of the trip at different speeds

112b. ≈ 400 miles b/c the last pt. is plotted at 400 miles away.

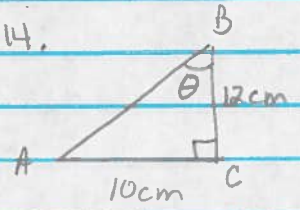
112c. From A to B: about 30 miles in 1 hr means 30mph
From B to C: about 220 miles in 3 hr means $\frac{220\text{mi}}{3\text{hrs}} = 75\text{mph}$
From C to D: about 0 miles in 2 hr means 0 mph
From D to E: about 100 miles in 2 hr means $\frac{100\text{mi}}{2\text{hr}} = 50\text{mph}$
From E to F: about 50 miles in 2 hr means $\frac{50\text{mi}}{2\text{hr}} = 25\text{mph}$



113a. $10 - 2(2x+1) = 4(x-2)$
$10 - 4x - 2 = 4x - 8$
$8 - 4x = 4x - 8$
$16 = 8x$
$\boxed{x = 2}$

113b. $5 - (2x-3) = -8 + 2x$
$5 - 2x + 3 = -8 + 2x$
$8 - 2x = -8 + 2x$
$16 = 4x$
$\boxed{x = 4}$

114.



$A = 60\,cm^2$, recall: Area of $\Delta = \frac{1}{2}bh$

$60 = \frac{1}{2}b(12)$

$60 = 6b$

$b = 10$

$a^2 + b^2 = c^2$

$10^2 + 12^2 = c^2$

$100 + 144 = c^2$

$\sqrt{c^2} = \sqrt{244}$

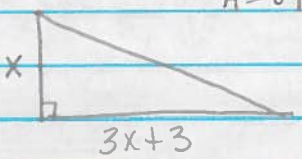
$c = \sqrt{244}$ or 15.62 = hypotenuse

$\tan B = \frac{10}{12}$

$m\angle B = \tan^{-1}\left(\frac{10}{12}\right)$

$m\angle B = 39.8°$

115.



$A = 84\,in^2$

$A = \frac{1}{2}bh$

$2 \cdot 84 = \frac{1}{2}x(3x+3) \cdot 2$

$168 = 3x^2 + 3x$

$3x^2 + 3x - 168 = 0$ gcf = 3

$3(x^2 + x - 56) = 0$

hypotenuse:

$x^2 + (3x+3)^2 = c^2$

$x^2 + 3[9x|9] = c^2$

$3x[9x^2|9x]$

$3x \quad 3$

8	$8x$	-56
x	x^2	$-7x$

$x \quad -7$

$-56x^2$

$8x \quad -7x$

$1x$

$(x+8)(x-7) = 0$

$x = -8$ $x = 7$

$x^2 + 9x^2 + 18x + 9 = c^2$

$10x^2 + 18x + 9 = c^2$

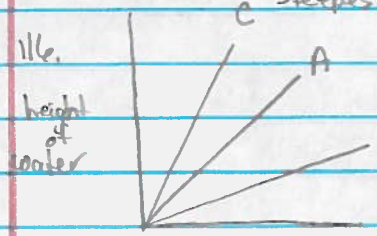
$c = \sqrt{10x^2 + 18x + 9}$

$P = x + (3x+3) + \sqrt{10x^2 + 18x + 9}$

$P = 7 + (3 \cdot 7 + 3) + \sqrt{10 \cdot 7^2 + 18 \cdot 7 + 9}$

$P = 7 + 24 + 25 = 56\,in$

116.



C steepest b/c smallest diameter

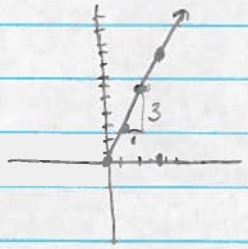
B flattest b/c largest diameter

Dependant variable: Height of water

Independent variable: Volume of water

117

x	y
1	3
2	6
3	9
4	12



$y = 3x$

118a. $P(x) = \frac{1}{26}$

b. $P(y) = \frac{1}{25}$

Chapter 1 Closure p. 119 - 127

119. $f(x) = \sqrt{x+4}$ and $g(x) = x^2 - x$

a. $f(5) = \sqrt{5+4} = \sqrt{9} = \boxed{3}$

b. $g(-1) = (-1)^2 - (-1) = 1 + 1 = \boxed{2}$

c. $10 = \sqrt{x+4}$

$100 = x + 4$

$\boxed{96 = x}$

d. $6 = x^2 - x$

$0 = x^2 - x - 6$

-3	$-3x$	-6
x	x^2	$2x$
	x	2

$-6x^2$, $-3x$, $2x$, $-1x$

$(x-3)(x+2) = 0$

$\boxed{x = 3,\ x = -2}$

120a. D: $x < 6$ or $-\infty < x < 6$

R: $y \leq 6$ or $-\infty < y \leq 6$

120b. D: $-\infty < x < \infty$ or $\mathbb{R}$

R: $-3 \leq y \leq 3$

12ba. $y = 3x + 15$

$y = 3 - 3x$

$3x + 15 = 3 - 3x$

$6x + 15 = 3$

$6x = -12$

$x = -2$

$y = 3(-2) + 15 = -6 + 15 = 9$

$\boxed{(-2, 9)}$

121b. $y = x^2 - 3x - 8$

$y = 2$

$x^2 - 3x - 8 = 2$

$x^2 - 3x - 10 = 0$

-5	$-5x$	-10
x	x^2	$2x$
	x	2

$-10x$, $-5x$, $2x$, $-3x$

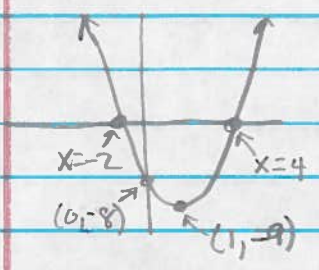
$(x-5)(x+2) = 0$

$x = 5,\ x = -2$

$\boxed{(5, 2)}$

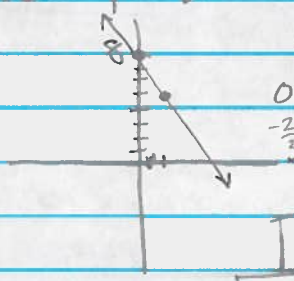
$\boxed{(-2, 2)}$

122. $f(x) = x^2 - 2x - 8$



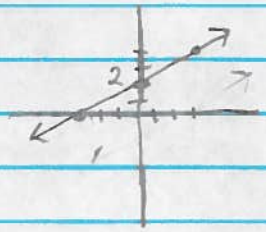
D: $-\infty < x < \infty$
R: $y \geq -9$
x-int's: $(-2,0)$ and $(4,0)$
y-int: $(0,-8)$
vertex: $(1,-9)$

123a. $y = -\frac{3}{2}x + 8$



x-int:
$0 = -\frac{3}{2}x + 8$
$-\frac{2}{3} \cdot -8 = \frac{3}{2}x \cdot -\frac{2}{3}$
$\frac{16}{3} = x$
$(\frac{16}{3}, 0)$
y-int: $(0, 8)$

123b. $2x - 3y = -6$
$-3y > -2x - 6$
$y = \frac{2}{3}x + 2$



x-int: $(-3, 0)$
y-int: $(0, 2)$

124a. $(2, 8)$, $m = -5$
$y = mx + b$
$8 = -5(2) + b$
$8 = -10 + b$
$b = 18$
$y = -5x + 18$

124b. $(-3, 4)$ and $(5, -4)$
$m = \frac{4 - -4}{-3 - 5} = \frac{8}{-8} = -1$
$y = mx + b$
$4 = -1(-3) + b$
$4 = 3 + b$
$b = 1$
$y = -1x + 1$

124c. $(-2, 4)$ and $(4, -5)$
$m = \frac{4 - -5}{-2 - 4} = \frac{9}{-6} = \frac{3}{-2}$
$y = mx + b$
$4 = -\frac{3}{2}(-2) + b$
$4 = 3 + b$
$b = 1$
$y = -\frac{3}{2}x + 1$

Chapter 1 Closure (cont'd)

125a. $\frac{x+2}{5} = \frac{10-2x}{3}$

$5(10-2x) = 3(x+2)$

$50 - 10x = 3x + 6$

$50 = 13x + 6$

$44 = 13x$

$\boxed{x = \frac{44}{13}}$

1256. $\frac{3}{x} - 1 = 8$

$\frac{3}{x} \times \frac{9}{1}$

$9x = 3$

$x = \frac{3}{9}$

$\boxed{x = \frac{1}{3}}$

125c. $x^2 + 3x = 18$

$x^2 + 3x - 18 = 0$

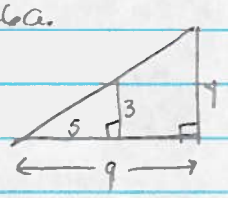
	x	3
-6	$-6x$	-18
x	x^2	$3x$

$-18x^2$, $-6x$, $3x$, $3x$

$(x-6)(x+3) = 0$

$\boxed{x = 6, \; x = -3}$

126a.



$\frac{3}{5} \times \frac{y}{9}$

$5y = 27$

$\boxed{y = \frac{27}{5} \text{ or } 5.4}$

1266

$\sin 15^\circ = \frac{y}{20}$

$y = 20 \sin 15^\circ$

$\boxed{y = 5.18}$

127. x = weeks

y = \$

$\boxed{y = 200 - 15x}$

$0 = 200 - 15x$

$15x = 200$

$x = \frac{200}{15} = 13.33 \text{ wks}$

0	200
1	185
2	170
3	155
4	140
5	125
⋮	⋮