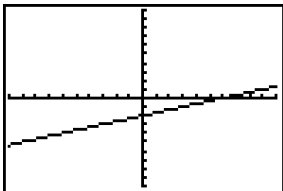
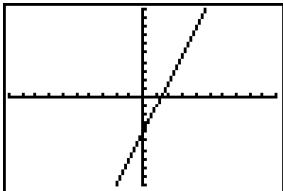


Fall Semester Final Exam Review Key Rev Fall 2012

Chapter 1

- 1) $\{-270\}$
- 2) Least to greatest: $\left\{-\frac{7}{5}, 0, 1, 1.\overline{414}, \sqrt{2}, \pi\right\}$
 1: *Whole, Counting, Integer, Rational*
 0: *Counting, Integer, Rational*
 $-\frac{7}{5}, 1.\overline{414}$: *Rational*
 $\sqrt{2}, \pi$: *Irrational*
- 3) $\{240\}$
- 4) $x \geq -7$
- 5) $d = \frac{CRD}{12s}$
- 6) $x > 3$ and $x < 15$
 $IN: (-\infty, 0) \cup [1, 3)$
- 7) $SBN: \{x \mid x < 0 \text{ and } 1 \leq x < 3\}$
 $D: \{-4, -2, 0, 2\}$
- 8) $R: \{0, 4, 5\}$

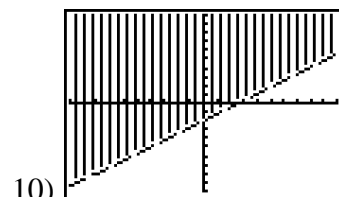
Chapter 2

- 1) $f(0) = 0; f\left(\frac{1}{2}\right) = -\frac{3}{2}; f(a) = -16(a)^3 + a$
- 2) Yes, it is a function
- 3) $\frac{1.2}{4}$
- 4) 
- 5) x -int: $(3, 0)$ and y -int: $(0, -3)$
- 6) 

7) A: $m = 0, y = 3$; B: $m = -1/2,$
 $y - 1 = -\frac{1}{2}(x + 1)$

8) $y + 4 = \frac{1}{2}(x + 2)$ or $y = \frac{1}{2}x - 3$

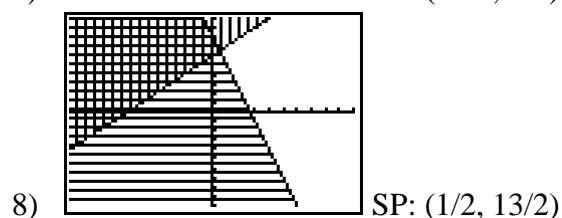
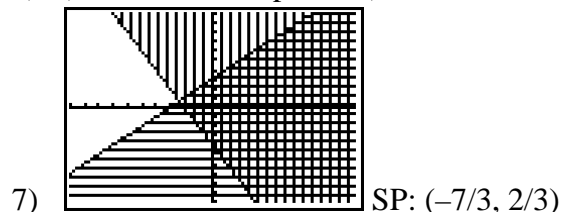
9) $y = 2x + 1$



11) $f(x) = |x + 2| - 3$

Chapter 3

- 1) $SP: (4, 1)$; Consistent, Independent
- 2) $SP: \text{Infinite}$; Consistent, Dependent
- 3) $SP: \text{No Solution}$; Inconsistent
- 4) Appx. 133 miles
- 5) (180 adults, 26 students)
- 6) (20 cashews, 80 peanuts)



9)
$$\begin{cases} x \geq 0 \\ y \geq 0 \\ 20x + 24y \leq 300 \\ 30x + 26y \leq 400 \end{cases}$$

$$P = 17x + 15y$$

- 10) (9 cases of Almonds, 5 cases of walnuts)
- 11) $(-9, 14)$
- 12) $(5, 1, -2)$
- 13) $(5, -2, 0)$

$$14) \begin{bmatrix} 10 & -5 & 5 \\ -1 & 11 & -4 \end{bmatrix}$$

$$15) x = \begin{bmatrix} -3 & 0 & -11 \\ -9 & -11 & 19 \end{bmatrix}$$

$$16) \begin{bmatrix} 8 & 24 \\ 16 & -16 \end{bmatrix}$$

$$17) \begin{bmatrix} 33 & 36 & 12 \\ -22 & 24 & 8 \\ -28 & 0 & 16 \end{bmatrix}$$

$$18) -39$$

$$19) -43$$

$$20) \begin{bmatrix} -46 \\ 41 \end{bmatrix}$$

$$21) \begin{bmatrix} 5.50 \\ 7.50 \end{bmatrix}$$

Chapter 4

1) V: $(-3.5, -6.25)$; AoS: $x = -3.5$; Opens up; Min: -6.25 ; D: $(-\infty, \infty)$; R:

$$[-6.25, \infty)$$

$$2) \{3 \pm 2i\}$$

$$3) (x+3)(x+20)$$

$$4) 5(x-3)^2; \{3DR\}$$

$$5) (x-2)(x-3)$$

$$6) (2x-1)(2x+5)(2x-5)$$

$$7) (x-10)(x^2+10x+100)$$

$$8) -2(x+4)(x-7) = 0; \{-4, 7\}$$

$$9) \frac{\sqrt{15}}{6}$$

$$10) \frac{3\sqrt{5}}{5}$$

$$11) 8x^2y^2z^5\sqrt{xz}$$

$$12) \frac{7}{25} + \frac{26}{25}i$$

$$13) \frac{\sqrt{7}}{2} + \frac{\sqrt{3}}{2}$$

$$14) 2 - 6i$$

$$15) 4i\sqrt{2}$$

$$16) 6i\sqrt{3}$$

$$17) -1 - 4i$$

$$18) 14 - 5i$$

$$19) -5$$

$$20) 31 + 8i$$

$$21) 1 - i$$

$$22) x = 9$$

$$23)$$

$$24) y = (x+3)^2 - 25$$

$$25) \{-5, 1\}$$

$$26) \{2\}, \text{ extraneous: } -3$$

$$27) \left\{-4, \frac{2}{3}\right\}$$

$$28) \left\{\frac{-1 \pm \sqrt{33}}{2}\right\}$$

29) Discriminant: -71 ; 2 imaginary sol.

30) Discriminant: -11 ; 2 imaginary sol.

$$31) \{\pm\sqrt{7}\}$$

$$32) \text{ Not possible; } \frac{32 \pm \sqrt{-128}}{32}$$

33) Appx. 1.93 seconds

Chapter 6

$$1) 9$$

$$2) \frac{1}{128a^{21}b^{28}y^7}$$

$$3) \frac{3x}{y^2}$$

$$4) 7^{5/3}$$

$$5) \{2\}$$

$$6) \{19\}$$

$$7) \{8\}$$

8) Right 1, Up 3

$$9) 742 \text{ in}^2$$