**Applied Topics in Math: Answers to Midterm Exam Review**

**Chapter 6 (Algebra and Functions) Pgs. 407-410**

10. s = -10

11. t = -3

12. x = -13

13. x = -31

14. x = 128/5

25. 

26. 

27. 

28. 

41. s = 64

42. J = 2

43. W = 20

44. z = 426.7

45. x = 150 lbs.

46. 4 in.

47. x = $119.88

48. s = 1.75 in.

75 – 78, 83 – 86 Graphs. We’ll do in class if any questions arise.

93. x = -1 x = -3

94. x = -6 x = 3

95. x = 2/3

96. x = -1/3

100. x = 3/2 x = -1

109. a) opens downward, because a<0 b) x = -2 c) (-2, 25) d) (0, 21) e) (-7, 0), (3, 0) f) graph

110. a) opens upward, because a>0 b) x = -2 c) (-2,-2) d) (0, 6) e) (-3, 0), (-1, 0) f) graph

**Chapter 7**

1 – 4 Graphing.

5. Infinite number of solutions. Same slope and y intercept.

6. No solution. Same slope but different y intercept.

7. Different slope. One solution

8. Different slopes. One solution

9. (3, 1)

10. (-1, -5)

11. (-2, -8)

12. There is no solution.

13. (4, -2)

14. (-7, 16)

15. (4, -2)

16. There are an infinite number of solutions.

17. (2, -1)

18. (2, 0)

31. $350,000 borrowed at 4% and $250,000 borrowed at 6%

32. 83 1/3 liters of 80% solution with 16 2/3 of 50% solution.

33. Topsoil costs $245 per ton and mulch costs $183 per ton.

34. a) After 32.5 months of operation the total cost of the units will be equal.

 b) Model 6070B is the better deal in the long run.

35. a) The total cost will be the same after 3 additional hours or 4 hours total.

 b) All-Day would be less expensive.

#36, 37, and 40 are graphs. Number 40 will be done in class.

**Chapter 2 (SETS) Review on Pgs. 94-95**

3. True

4. False, a set cannot be a proper subset of itself

5. False, disjoint sets have no sets in common

6. True

7. False, equal sets must contain the exact same elements, not just the same number of elements

8. True

9. True

27. {5, 7}

28. {1, 2, 3, 4, 5, 6, 7, 8}

29. {9, 10}

30. {1, 2, 4, 6, 7, 8, 10}

31. {1, 3}

32. {1, 7}

35. 16 🡪 $2^{4}=16$

36. 15 🡪 $2^{4}-1=16-1=15$

38. {a, c, d, f, g, i, k, l}

39. {i, k}

40. {a, b, c, d, f, g, h, i, k, l}

41. {f}

42. {a, f, i}

43. {a, b, d, f, h, i, l}

53. Venn Diagram 🡪 we can do in class if necessary

1. 315
2. 10
3. 30
4. 110

54. Venn Diagram 🡪

1. 38
2. 298
3. 28
4. 236
5. 106

**Chapter 12 (PROBABILITY) Review on Pgs. 825-827**

16. $\frac{3}{85}$

17. 7:3

19. a) -$0.23

 b) $.23

 c) lose $23.08

20. 660 people

23. 

24. 

25. 

27. 1

28. 

41. 

42. 

43. 

44. 

45. 

46. 

47. 

48. 

54. a) 3003

 b) 3,628,800

56. 35,640

59. 

60. 

61. 

62. 