MATH103: Week1 Assignment

Chapter 5: Number Theory and the Real Number System

The assigned exercises are from the fifth edition of the textbook. The exercises begin at the specified page number and are the exercise sets at the end of each section. Do all listed problems neatly with pencil on paper. Showing your step-by-step solution process is the important task for all assignments, because it reinforces your understanding of the content. Cleanly, erase all errors before writing the correct solution and circle your answer.

Odd problem solutions are in the Student's Solutions Manual. Even number problem answers (underlined) should be checked with the answers provided on the back of this handout. If you feel the answer is incorrect, then please discuss this problem in the next class. Your homework will be collected and graded at the beginning of Exam 1. You will receive a zero on the assignment if it is not submitted at that time.

Date Due: Week 2 Class 1

Section	Page	Exercise Set Selected Problems
5.1	235	7abd, 9abd, 10abd, 13, 17, 22, 27, 37, 40, 47, 51, 52, 59, 65, 68, 91, 93, 94, 95, 97, 98
5.2	247	7, 9, 10, 23, 27, 30, 35, 39, 40, 47, 49, 52, 55, 63, 64, 73, 75, 76, 77, 79, 80, 85, 91, 92, 97, 99, 100, 103, 109, 110, 117, 119, 120, 121, 123, 124
5.3	261	5, 7, 8, 13, 15, 16, 21, 23, 24, 27, 31, 34, 39, 43, 44, 61, 63, 64, 67, 69, 70, 87, 89, 92, 101, 103, 104, 125, 127, 128, 133, 135, 136
5.4	271	9, 13, 16, 19, 21, 22, 31, 35, 38, 45, 49, 52, 55, 61, 66, 71, 75, 76, 81, 83, 84
5.5	280	3, 7, 10, 11, 13, 14, 17, 19, 20, 25, 27, 28, 35, 37, 38, 53, 54, 55
5.6	527	5, 9, 12, 15, 17, 22, 25, 29, 30, 31, 33, 34, 39, 41, 42, 45, 53, 60, 71, 75, 80, 83, 91, 96, 101, 107, 110, 111, 115, 116
5.7		Skip this section

Answers to assigned even numbered exercises arranged by section:

5.1) 10 a)no b)yes d)no 22 False 40 $1575 = 3^2 \cdot 5^2 \cdot 7$

52 20 68 2400 94 72 cards 98 360 seconds or 6 minutes

5.2) 10 > 30 0 40 -17 52 0 64 -1 76 undefined 80 33 92 61 100 3 110 -2

120 Average deficit = -$745 billion; 2007 deficit exceeded this average by $49 billion

124 $376 billion

5.3) 8 $\frac{7}{8}$ 16 $-\frac{32}{5}$ 24 $31\frac{13}{25}$ 34 $6.\overline{6}$ 44 $\frac{16}{25}$ 64 $3\frac{1}{2}$

70 $\frac{2}{3}$ 92 $\frac{17}{12}$ or $1\frac{5}{12}$ 104 $-11\frac{1}{4}$ 128 10 brownies 136 $\frac{1}{4}$

5.4) 16 a) 2.5 b) 2.51 c) 2.507 22 $8\sqrt{3}$ 38 $-5\sqrt{2}$ 52 $18\sqrt{3}$

66 $\frac{\sqrt{35}}{7}$ 76 $6\sqrt{5}$ miles or 13.4 miles 84 $0.44R_f$; 44 weeks

5.5) 10 1 or 2 or -1 or -2 ... 14 $\sqrt{5}$ 20 7 28 $2\sqrt{5}+10$ 38 comm. prop. of multi.

54 distr. prop.; comm. prop. of add.; assoc. prop. of add.; comm. prop. of add.

5.6) 12 $3^4 = 81$ 22 $\frac{1}{8}$ 30 $3^{-3} = \frac{1}{27}$ 34 $\frac{1}{x^2}$ 42 $-\frac{3y^{15}}{x^3}$ 60 5.3×10^2

80 20,000,000 96 6×10^{-8} 110 1.2×10^1 116 mass= 1.336×10^{-19} grams

