

Homework 7
Math 130 - Due March 10, 2011

Written Problems from P&B:

Section 4.2 (p. 100) # 3, 4, 7, 9, 10

Section 4.3 (p. 107) # 4, 5, 7, 8, 10

Section 5.1 (p. 112) # 4, 5, 6, 7

Section 5.2 (p. 117) # 2, 4, 5, 6, 8

To be done as a 40-minute quiz. Please show all your work, you will be graded on the presentation of your solutions as well as the mathematics involved.

1. Develop the identity

$$(a + b)^2 - (a - b)^2 = 4ab$$

in the same manner as P & B develop the identity

$$(a + b)^2 = a^2 + 2ab + b^2$$

on page 98. HINT: you may wish to use the picture in problem 9 on page 100.

2. Prove the divisibility test for 9 for a number with any number of digits.

NOTE: While it may help to start with a proof for 2 or 3 digit numbers (like the book does for the divisibility by 3 test), you'll need a more general argument to completely answer this problem.