

MATH 103 – HOMEWORK 1 – 50 POINTS – DUE Tue May 26, 2009

Write up your answers neatly on 8.5 x 11 inch paper. Your turn in work MUST be presentable. Your work should be sequentially down the paper.

1. Give the following sums (4 points each)

(a)  $3+6+9+12+\dots+300$

(b)  $16+17+18+19+20+\dots+98+99+100.$

2. There are over 100,000 different words in Shakespeare's writings. Suppose that all the words have 10 letters or less. (3 points each)

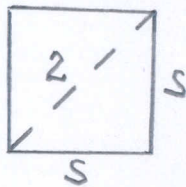
(a) How many English words with no letters repeated have 10 letters or less?

(b) How many sets with 10 letters or less are there? (Assume you can have a set with no letters.)

(c) In the state of VA a vehicle license plate can have 3 letters followed by 3 digits. If no letters can be repeated how many license plates are possible?

3. Give the areas of the following figures (3 points each)

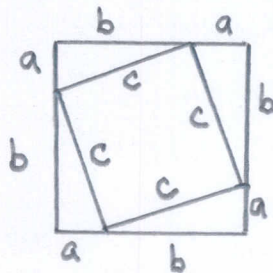
(a) Area of the square



(b) Area of the house



(c) Area small square (i)  $a=3, b=4$     Area four triangles (ii)  $a=8, c=10$



4. You deposit \$1000 in a bank that pays 4% interest each month. How much money will you have after (3 points each)

(a) 10 years if you do not invest any more money?

(b) 6 months if you invest \$100 each month after the first month?

Give a formula for the part (b).

5. Give the following numbers (3 points each)

(a)  $2/5$  as a decimal

(b)  $3/7$  as a decimal

(c)  $0.12361236123612361236$  and  $0.12361236123612361236\dots$  as rational numbers.