Algebra for Teachers Homework 1 Due 2/3 Name

Score _____

Present a complete solution for each problem. Answers alone will give no credit.

1. Using digit "3" exactly five times, signs of four arithmetical operations (addition, subtraction, multiplication, division) and parentheses, present all integers from 1 to 10.

Examples: $33: 3+3-3=11, (3-3:3) \cdot (3+3)=12.$

2. Find the last digit of the sum $1^2 + 2^2 + \cdots + 89^2$ without calculating the sum.

3. Make addition and multiplication tables for a positional system with base 5. Calculate $(421)_5 \cdot (432)_5$. Check your calculations using decimal system, that is find the decimal presentations for two given numbers, multiply them and convert the product to a base 5 system.

4. Find x if :

a) $(110111001101)_2 = (x)_{16}$ **b)** $(4E2A)_{16} = (x)_{10}$

5. In a long division below, almost all digits have been replaced by the sign *. Solve this division puzzle. Show your arguments.

