Math 123-01
Fall 2025
Dr. Lily Yen

Assignment 1
Show all your work

Name: _____

Number: _____

Signature: _____

Score: ___/10

Problem 1: Draw a tree diagram to help you count the number of different ice cream cones (made of one cone, one scoop of ice cream, and one topping), given that there are three kinds of cones, six different flavours of ice cream, and four kinds of toppings.

Score: /3

Problem 2: Discover the following number trick.

   a. Choose a number (any number).

   b. Add 5.

   c. Double the result.

   d. Subtract 4.

   e. Divide by 2.

   f. Subtract the number first thought of.

What is your answer? Prove that the number trick yields the same answer everytime regardless of the number chosen in Step a.

Score: /3

Problem 3: Anjali's family was invited to a friend's party. Suppose there were 6 families in total: 12 parents and 14 ($= 1 + 2 + 2 + 3 + 3 + 3$) children. If all the adults shook hands with one another except with their spouses and all the children shook hands except with their siblings, how many handshakes took place?

Score: /4