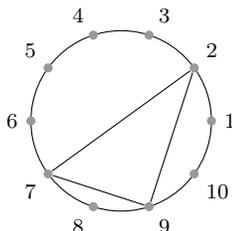


Name: _____

Directions: Show all work. No credit for answers without work.

1. [1 point] Suppose that a set of 10 points are equally spaced around a circle. How many triangles can be formed whose vertices are among the equally spaced points? One such triangle is shown below. Express your answer as a simplified, concrete number.



2. [2 parts, 2 points each] Recall that a standard deck of cards has 4 suits (clubs, hearts, diamonds, spades) and 13 ranks (ace, 2 through 10, jack, queen, king), and there are 52 cards in total, one for each suit/rank pair. A poker hand is a set of five cards.
- (a) How many poker hands have exactly two clubs?
- (b) How many poker hands have an even number of clubs? You may leave your answer as a summation.

3. How many ways are there to arrange the letters in the word 'ATTRACTION':

(a) [**2 points**] with no additional restrictions?

(b) [**2 points**] with no consecutive T's? (So AATRCITONT counts but ATTRACTION and ATTRACION do not.)

(c) [**1 point**] with no consecutive repeated letters? (So TATATCIONR counts but TAATCTIONR and TATTACIONR do not.)