GGM Peru Problem Set 3

1. What is the difference between the area of a square with side length 8 and a circle with a diameter of 8?

2. If there are 45 students in a class, and 2/3 of them only play a sport, 1/5 of them play a sport and play an instrument, and 5 students only play an instrument, how many students neither play a sport nor an instrument?

3. What is the greatest common factor of 346 and 1092?

4. What is the difference between the mean and the median in the set of numbers {1, 4, 6, 7, 8, 11, 12, 15, 17}?

5. How many triangles can be made using the vertices of an octagon? (Each triangle must be inside the octagon)

6. What is the probability that when you roll two regular dice, the product of the numbers facing up is divisible by 6?

7. What is the area of a right triangle ABC if the base BC has a length of 6 and angle C has a measure of 60^{o}?

8. If Herbert got 85%, 93%, and 77% on the three tests he has taken and wants to get at least 88% average overall on four tests, what is the minimum that he must score on the fourth test to achieve this?

9. What is the remainder when you divide 12^6 by 7?

10. How many ways are there to arrange 7 books on a shelf if two of the books can never be right next to each other?