1. _____ What is the sum of all the x and y coordinates in the ordered pairs where the graph of $y = 2x^2 - 6x - 7$ crosses each of the coordinate axis on the Cartesian plane?

2. _____ Matt has a pad of sticky notes which he could evenly divide between himself and his sister. If Matt's friend Jason also wants an equal share, they can still be divided equally among Matt, his sister, and Jason. When Evan arrives demanding a double share, Matt realizes he will have 4 spare sticky notes if he attempts to divide them up. Evan agrees to only take one share and the sticky notes are divided equally among the four, leaving two extra sticky notes. What is the smallest whole number of sticky notes that Matt can have?

3. _____ Tracy randomly selects an integer between 20 and 39 inclusive. She tells you that at least one of the digits is even. What is the probability that the other digit is also even? Express your answer as a common fraction in simplest form.

4. _____ David, Bobby, and Calvin all have fan clubs. A random survey involves 500 people, each of which is a member of at least one of the three fan clubs: 175 are in David's fan club, 245 are in Bobby's, and 213 are in Calvin's. Assuming 36 people in the survey are in all three fan clubs, how many people surveyed are in exactly two fan clubs?

5. _____ A sphere is inscribed inside of a cube that is inscribed inside of a sphere. If the radius of the larger sphere is 4, what is the surface area of the smaller sphere? Express your answer as a common fraction in terms of pi?

6. _____ How many positive, five-digit numbers can be made with the digits 5, 7, and 2, if each digit can be used at most twice?

7. _____ Cevians AD and BE intersect at a point P inside triangle ABC. The ratio of AE to EC is 6:5 and the ratio of BD to CD is 3:7. The ratio of EP to PB is m:n. Find the sum of m and n.

8. _____ Justin enjoys playing blocks with his sister. One day, he creates a tower that is twelve blocks high. Justin is proud of the creation, and decides to paint it with red and blue paint. However, he wants the tower to meet his aesthetic requirements, so he decides that he can have no more than three red blocks in a row. He also does not want any blue blocks to touch. Assuming that all the blocks are either red or blue, how many ways can Justin paint the tower?