Assignment 2

1. Suppose that the density of points on a line is 3 per cm. If a line segment 10 cm long is randomly divided into 10 parts, what is the probability that a point will lie in the middle segment?

2. A square with side length 10 cm has a square removed from one of its corners. The remaining part is then divided into two triangles. What is the probability that a randomly chosen point inside the remaining part will lie in the larger triangle?

3. Consider a triangle with sides of lengths 5 cm, 12 cm, and 13 cm. If a point is randomly chosen inside the triangle, what is the probability that it will lie in the region closer to the side of length 12 cm?

4. A circle with radius 5 cm is divided into four equal sectors. What is the probability that a randomly chosen point inside the circle will fall in the sector that is not adjacent to the center of the circle?

5. A rectangle with dimensions 10 cm x 15 cm has a circle inscribed in it. What is the probability that a randomly chosen point inside the circle will also lie inside the rectangle?