

# AI1110 ASSIGNMENT-8

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**Abstract**—This document contains the solution for Assignment 8 (papoulis ch2 problem-2.20)

## QUESTION 2.20 :

A player tosses a penny from a distance onto the surface of a square table ruled in 1 in. squares. If the penny is  $\frac{3}{4}$  in. in diameter, what is the probability that it will fall entirely inside a square (assuming that the penny lands on the table).

**Solution :** here as long as the centre is  $r$  units away from the sides of the square it will stay inside the square and that is our question requirement.

so the desired probability will be :

$$= \frac{(1 - 2r)^2}{1^2} \quad (1)$$

$$= \left(1 - \frac{3}{4}\right)^2 \quad (2)$$

$$= \frac{1}{16} \quad (3)$$