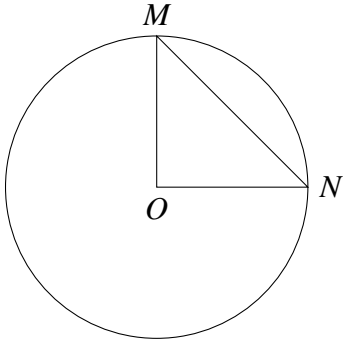# GATE 2021 ME 3Q

ee23btech11223 - Soham Prabhakar More

Question: In the figure above figure, O is the center of the circle and, M and N lie on the circle.
The area of the right triangle MON is $50cm^2$
What is the area of the circle in cm^2?
(GATE 2021 ME 3Q)

Solution:

Parameter	Description
r	Radius of Circle
A	Area of Right triangle ΔOMN
A_c	Area of Circle

TABLE 1: Table of parameters

By Table 1,

$$A = \frac{1}{2}\pi \, ON \cdot OM = 50cm^2 \qquad (1)$$

$$\because r = ON = OM \qquad (2)$$

$$\frac{1}{2}\pi r^2 = 50cm^2 \qquad (3)$$

$$\implies r = 10cm \qquad (4)$$

$$\implies A_c = \pi r^2 = 100\pi \qquad (5)$$