

NCERT Mathematics 11.9.3 Q32

EE23BTECH11213 - MUTHYALA NIKHITHA SRI

Question: If A.M. and G.M. of roots of a quadratic equation are 8 and 5, respectively, then obtain the quadratic equation.

Solution:

Parameter	Description	Value
$\frac{r_1 + r_2}{2}$	A.M. of roots	8
$\sqrt{r_1 \cdot r_2}$	G.M. of roots	5

r_1 and r_2 be the roots of $ax^2 + bx + c = 0$.

$$r_1 \cdot r_2 = 25 \quad (1)$$

$$\Rightarrow c = 25 \quad (2)$$

$$r_1 + r_2 = 16 \quad (3)$$

$$\Rightarrow b = -16 \quad (4)$$

$$\Rightarrow x^2 - 16x + 25 = 0 \quad (5)$$

