

AI1110 ASSIGNMENT 1

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Question: : 10(a) : The sum of the ages of vivek and his younger brother amit is 47 years. The product of their ages in years is 550. Find their ages.

Solution: Let the age of vivek be 'a' and the age of amit be 'b'. $a, b \in N$

Given

$$a > b \quad (1)$$

$$a + b = 47 \quad (2)$$

$$ab = 550 \quad (3)$$

from (3)

$$b = \frac{550}{a} \quad (4)$$

substituting (4) in (2)

$$\implies a + \frac{550}{a} = 47$$

$$\implies a^2 - 47a + 550 = 0$$

$$\implies a^2 - (25 + 22)a + (25 \times 22) = 0$$

$$\implies a = 25 \text{ or } a = 22$$

according to (1)

discarding $a = 22$ as if $a = 22$ then $b = 25$

\therefore the value of $a = 25$ and value of $b = 22$

The age of vivek is 25 years and age of amit is 22 years