

# AI1110 ASSIGNMENT 1

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## Q 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)

$$b = \frac{550}{a}$$

substituting (4) in (2)

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

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

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

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

according to (1)

discarding  $a = 22$  as if  $a = 22$

then  $b = 25$

so  $a = 25$  and  $b = 22$

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