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1. Ashu is x years old while his mother Mrs. Veena is x^2 years old. Five years hence Mrs. Veena will be three times old as Ashu. Find their present ages.
Solution:

Given, Ashu's present age is x years and his mother Mrs. Veena is x^2 years.
After 5 years, Ashu age will be (x + 5) years
And his mother Mrs. Veena age will be (x^2 + 5) years
Given relationship between their ages can be expressed as:
x^2 + 5 = 3(x + 5)
x^2 + 5 = 3x + 15 x^2 + 5 - 3x - 15 = 0
x^2 - 5x + 2x + 10 = 0
x(x - 5) + 2(x - 5) = 0
(x - 5)(x + 2) = 0
x = 5 or x = - 2(neglected) since, the age can never be negative
Hence, Ashu's present age is 5 years and his mother's age is 25 years.

2. The sum of the ages of a man and his son is 45 years. Five years ago, the product of their ages was four times the man's age at the time. Find their present ages.
Solution:

Let the present age of the man be x years
Then, the present age of his son will be = (45 - x) years
Five years ago, man's age = (x - 5) years
And, his son's age = (45 - x - 5) = (40 - x) years
Given relationship between their ages can be expressed as:
(x - 5)(40 - x) = 4(x - 5)
40x - x^2 + 5x – 200 = 4x - 20
-x^2 + 45x – 200 = 4x - 20
-x^2 + 45x - 200 - 4x + 20 = 0
- x^2 + 41x - 180 = 0
x^2 - 36x - 5x + 180 = 0   [By factorisation method]
x(x - 36) - 5(x - 36) = 0
(x - 36)(x - 5) = 0
x = 36 or x = 5,
But, the father's age can never be 5 years
Thus, when x = 36, 45 - x = 45 - 36 = 9
Therefore, the man's present age is 36 years and his son's age is 9 years.

3. The product of Shikha's age five years ago and her age 8 years later is 30, her age at both times being given in years. Find her present age.
Solution:

Let's assume the present age of Shikha be x years
So, 8 years later, age of her = (x + 8) years

Five years ago, her age = (x - 5) years
Given relationship between the ages can be expressed as:
(x - 5)(x +8) = 30
x^2 + 8x - 5x - 40 = 30
x^2 + 3x - 40 - 30 = 0
x^2 + 3x - 70 = 0   [By factorisation method]
x(x - 7) + 10(x - 7) = 0
(x - 7)(x + 10) = 0
x = 7 or x = -10 (neglected)
Since, the age can never be negative.
Therefore, the present age of Shikha is 7 years.

**4. The product of Ramu's age (in years) five years ago and his age (in years) nine years later is 15.
Determine Ramu's present age.**
Solution:

Let the present age of Ramu be x years
So, 9 years later, the age of him = (x + 9) years
And, five years ago, his age = (x - 5) years
Given relationship between the ages can be expressed as:
(x - 5)(x + 5) = 15
x^2 + 9x - 5x - 45 = 15
x^2 + 4x - 45 - 15 = 0
x^2 + 4x - 60 = 0
x^2 - 6x + 10x - 60 = 0   [By factorisation method]
x(x - 6) + 10(x - 6) = 0
(x - 6)(x + 10) = 0
x = 6 or x = - 10(neglected) as the age can be never be negative.
Hence, the present age of Ramu is 6 years.