Qudratic Equation

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10th Maths - Chapter 4

This is Problem-2 from Exercise 4.2

1. John and Jivanti together have 45 marbles. Both of them lost 5 marbles each, and the product of the number of marbles they now have is 124. We would like to find out how many marbles they have to start with.
   Solution:
   Given Data: $\left(x^2 - 45x + 324 = 0\right)$

   This can also be written as: $\left(x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}\right)$

$$\left(x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}\right) \tag{1}$$

$$\left(x = \frac{45 \pm \sqrt{-45^2 - 4 \times 1 \times 324}}{2 \times 1}\right) \tag{2}$$

$$\left(x = \frac{45 + \sqrt{2025 - 1296}}{2}\right) \tag{3}$$

$$\left(x = \frac{45 + \sqrt{729}}{2}\right) \tag{4}$$

$$\tag{5}$$

   1st condition

$$\left(x = \frac{45 + 27}{2}\right) \tag{6}$$

$$\left(x = \frac{72}{2}\right) \tag{7}$$

$$x = 36 \tag{8}$$

2nd Condition

$$\left(x = \frac{45-27}{2}\right) \tag{9}$$

$$\left(x = \frac{18}{2}\right) \tag{10}$$

$$x = 9 \tag{11}$$

type your solutions using these commands