QUADRATIC EQUATIONS

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10^{th} Maths - Chapter 4

This is Problem-2.2 from Exercise 4.1

1. Represent the following situations in the form of quadratic equations : (ii) The product of two consecutive positive integers is 306. We need to find the integers.
   Solution: :
   Required quadratic equation is :

$$x^2 + x - 306 = 0 \tag{1}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \tag{2}$$

$$x = \frac{-1 \pm \sqrt{1^2 - (4)(1)(-306)}}{(2)(1)} \tag{3}$$

$$x = \frac{-1 \pm \sqrt{1 + 1224}}{2} \tag{4}$$

$$x = \frac{-1 \pm 35}{2} \tag{5}$$

$$x_1 = \frac{34}{2} \tag{6}$$

$$x_2 = \frac{-36}{2} \tag{7}$$

$$x_1 = 17 \tag{8}$$

$$x_2 = -18 \tag{9}$$

$$\tag{10}$$

   since the two integers are 17 and -18