

10th Maths - Chapter 4

This is Problem-6(v) from Exercise 4.2

A cottage industry produces a certain number of pottery articles in a day. It was observed on a particular day that the cost of production of each article (in rupees) was 3 more than twice the number of articles produced on that day. If the total cost of production on that day was ₹ 90, find the number of articles produced and the cost of each article

Given: Let the number of these articles produced in a day be = x .

Cost of each article was 3 more than twice the number of articles produced that be = $3 + 2x$

total cost of the production = 90

Solution:

$$((x)(2x + 3) = 90)$$

$$(2x^2 + 3x = 90)$$

$$(2x^2 + 3x - 90 = 0)$$

Now we have to factorise it

$$(2x^2 - 12x + 15x - 90)$$

$$(2x(x - 6) + 15(x - 6))$$

$$((2x + 15)(x - 6))$$

$$(x = \frac{-15}{2}) \text{ or } (x = 6)$$

Therefore, number of articles produced in the day = 6

Cost of each article: $(3 + 2(6) = 15)$