chillimath
education for all

math
.com
chillimath.com
education for all

Ncert Solutions Class 10 Quadratic Equations

Exercise 4.2

6. 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 Rs 90, find the number of articles produced and the cost of each article.

Solution:

Let the no. of articles produced = x

and cost of production of an article = (2x + 3)

ATQ : -   x(2x + 3) = 90

$\Rightarrow$ $2x^2 + 3x - 90 = 0$

$\Rightarrow$ $2x^2 + 15x - 12x - 90 = 0$

$\Rightarrow$ x(2x + 15) − 6(2x + 15) = 0

$\Rightarrow$ (2x + 15) (x − 6) = 0

$\Rightarrow$ (2x + 15) = 0   or   (x − 6) = 0

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

Therefore, number of articles produced on that day = 6

cost of each article = 2x + 3 = (2 × 6 + 3) = Rs 15.