Represent the following situations in the form of quadratic equations:

(i) The area of a rectangular plot is 528 m^2. The length of the plot (in metres) is one more than twice its breadth. We need to find the length and breadth of the plot.

(ii) The product of two consecutive positive integers is 306. We need to find the integers.

(iii) Rohan's mother is 26 years older than him. The product of their ages (in years) 3 years from now will be 360. We would like to find Rohan's present age.

Solution:

(i) Let breadth of the rectangular plot = x m
Then, length of the plot = (2x + 1)m
Area of a rectangular plot = l x b ,
$\Rightarrow$ 528 (2x + 1)x
$\Rightarrow$ 528 = $2x^2$ +x
$\Rightarrow$ $2x^2 + x - 528 = 0$
Which is the required quadratic equation.

(ii) Let the two consecutive integers be x and x + 1
Then, x(x+l) = 306
$\Rightarrow$ x^2 +x-306 = 0
Which is the required quadratic equation.

(iii) Let the present age of Rohan = x years
Rohan's mother's present age = (x + 26) years
After 3 years, Rohan's age = (x + 3) years
After 3 years, Rohan's mother's age = (x + 26 + 3) years
According to question,
(x + 3) (x + 29) = 360
$\Rightarrow$ $x^2 + 29x + 3x + 87 - 360 = 0$
$\Rightarrow$ $x^2 + 32x - 273 = 0$
Which is the required quadratic equation.