QUESTION – 1

a) What number is to be added to $x^2 + 6x$ to get a perfect square ?

b) Find the natural number value of x from the equation $x^2 + 6x = 16$.

c) 12 times a natural number is added to twice the square of that number gives 32 . Find the number .

QUESTION – 2

When each side of a square was decreased by 6 metres , the area became 169 square - metres .

a) Write down a second degree equation by taking the side of the original square as x

b) What was the length of a side of the original square ?

QUESTION – 3

1 added to the product of two consecutive odd numbers gives 900 .

a) Write down a second degree equation by taking the smaller number as x .

b) What are the numbers ?

QUESTION – 4

Consider the arithmetic sequence 5 , 8 , 11 , . . .

a) What is its common difference ?

b) Write its algebraic form .

c) The square of a term of this sequence is 6400 . What is its position ?

QUESTION – 5

Consider the arithmetic sequence 7 , 9 , 11 , . . .

a) What is its common difference ?

b) Write its nth term .

c) What is the sum of the first n terms of this sequence ?

d) How many terms of this sequence starting from the first is to be added to get 391 ?

In the figure a pair of opposite sides of a square are extended by

4 centimetres . Area of the larger rectangle is 140 square centi -

metres.
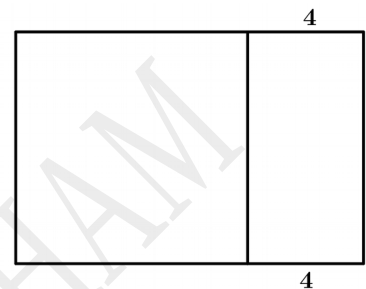
a)If the length of a side of a square is taken as x centimetres ,

   form a second degree equation

b) What is the length of a side of the square ?

The perimeter of a rectangle is 64 centimetres and its area is 247 square centimetres .

a) Length $+$ breadth = _____

b) If the length of the rectangle is taken as $16 + x$ centimetres , what is the breadth of

   the rectangle ?

c) Calculate the length and the breadth of the rectangle .

a) Find the following sum .

   1 + 2 + 3 + . . . + 10

b) How many consecutive natural numbers starting from 1 should be added to get 120 ?

Consider the arithmetic sequence 5 , 9 , 13 , . . .

a) What is its common difference ?

b) Write its nth term .

c) What is the sum of the first n terms of this sequence ?

d) How many terms of this sequence starting from the first is to be added to get 230 ?

QUESTION – 10

In a right triangle , one of the perpendicular sides is 3 centi-

metres more than the other .   A square drawn on the

hypotenuse with the hypotenuse as side and its area is

65 square centimetres .
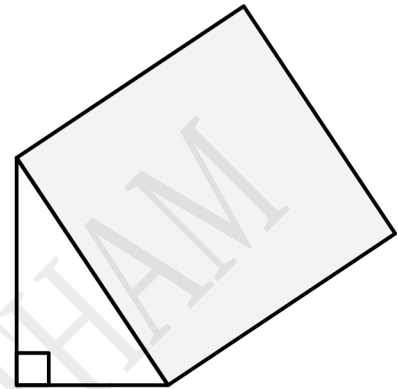
a) By taking the shortest side as x centimetres , write a

 second degree equation using the given details .

b) Find the lengths of the perpendicular sides of the triangle .