**Q1**: A rectangle has an area of 48 cm2 , and its length is 8 cm , find the length of its diagonal .

**Solution :**

8 cm

First we should find the with , since **Area = length x width** we have

48 = 8 x w

Hence, w = 48 / 8 = 6 cm

To find the diagonal, apply **pythagorean theorem** so we will get

D2 = l2 + w2

So D2 = 64 + 36 = 100

Hence **D = 10 cm**

**Q2**: A right-angle triangle has side lengths x , x+7 , x+8 . Determine the lengths of its sides .

**Solution :**

The largest side is “x+8” , so it must be the hypotenuse of the triangle. Hence by applying Pyth. Theorem we will get :

(x + 8)2 = (x + 7)2 + x2

So x2 + 16x + 64 = x2 + 14x + 49 + x2

By simplifying this equation you will get

x2 - 2x – 15 = 0

(x – 5)(x + 3) = 0

So either x – 5 = 0 , hence x = 5

Or x + 3 = 0 hence x = -3 (ignored)

So the length of the sides are 5 , 5 + 7 , 5 + 8 which are

**5 , 12 , 13** .