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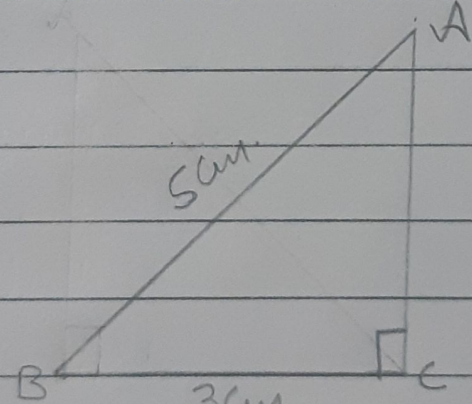
Construction of a triangle using RHS Criterion.

Exercise - 10.5

① Construct a right angled triangle ABC with $\angle C = 90°$, AB = 5 cm and BC = 3 cm.

Solution:- **Step 1** : Draw a rough sketch of given measures.

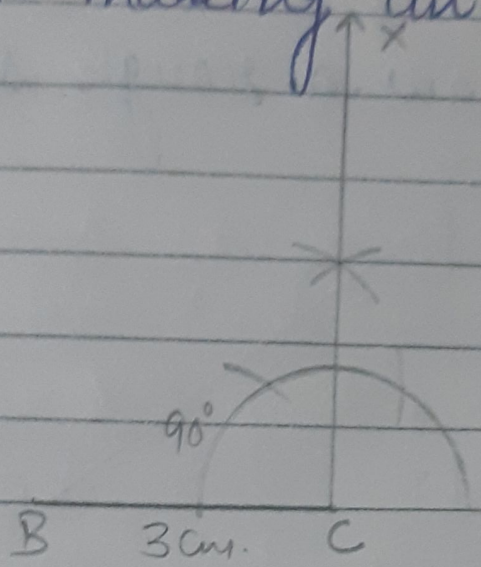


Rough Sketch

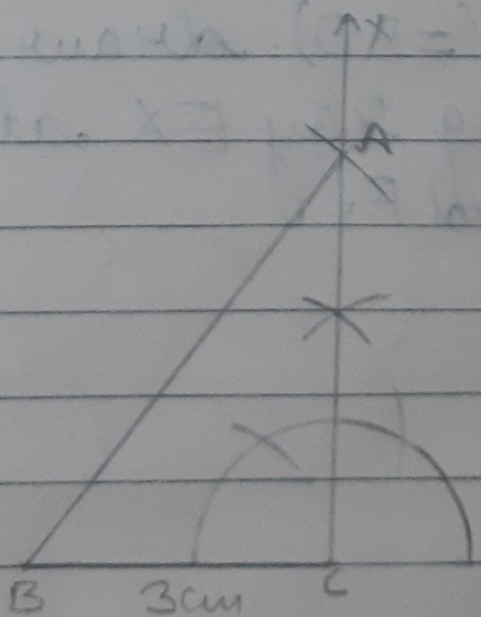
Step 2 : Draw a line segment BC = 3 cm.

B 3cm C

Step 3 :- With the help of a compass taking C as centre, draw a ray CX making an angle 90° with BC.



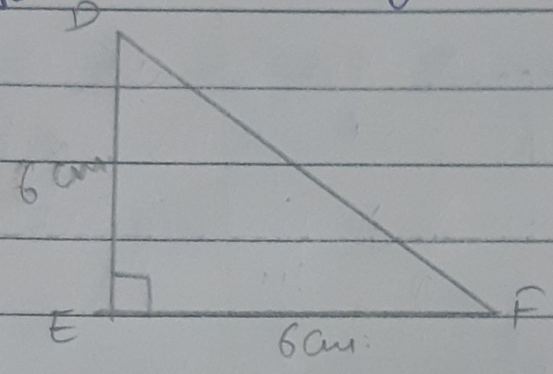
Step 4 :- With B as centre and radius 5cm. (= AB), draw an arc intersecting CX at a point A. and Join A and C.



Hence △ABC is the required triangle.

2.) Construct an isosceles right angled triangle DEF where $\angle E = 90°$ and $EF = 6$ cm.

Solution:- **Step 1**: Draw a rough sketch of given measures.

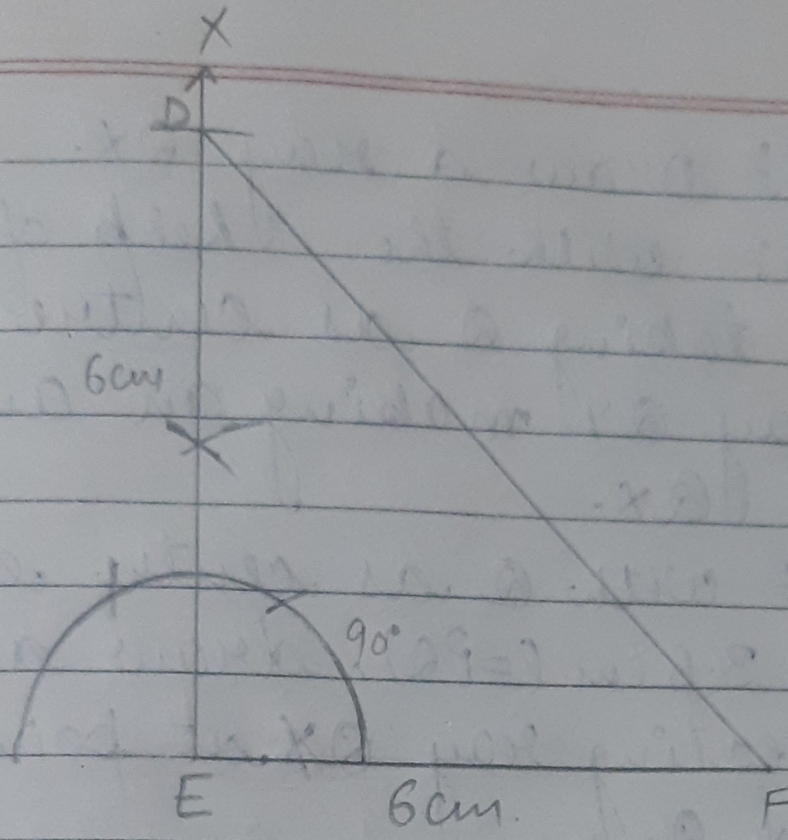


Step 2: Draw a line segment $EF = 6$ cm.

Step 3: With the help of a compass taking E as centre, draw a ray EX making an angle 90° with EF.

Step 4: With E as centre and radius 6 cm. (=ED). draw an arc intersecting ray EX at a point D.

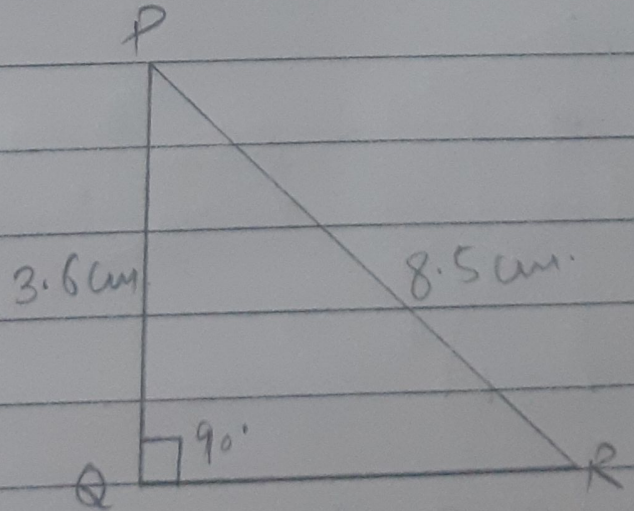
Join D and F.



Hence ΔDEF is required triangle.

(13.) construct a right angled triangle PQR in which $\angle Q = 90°$, PQ = 3.6 cm and PR = 8.5 cm.

Solution:- **Step I** :- Draw a rough sketch of given measures.



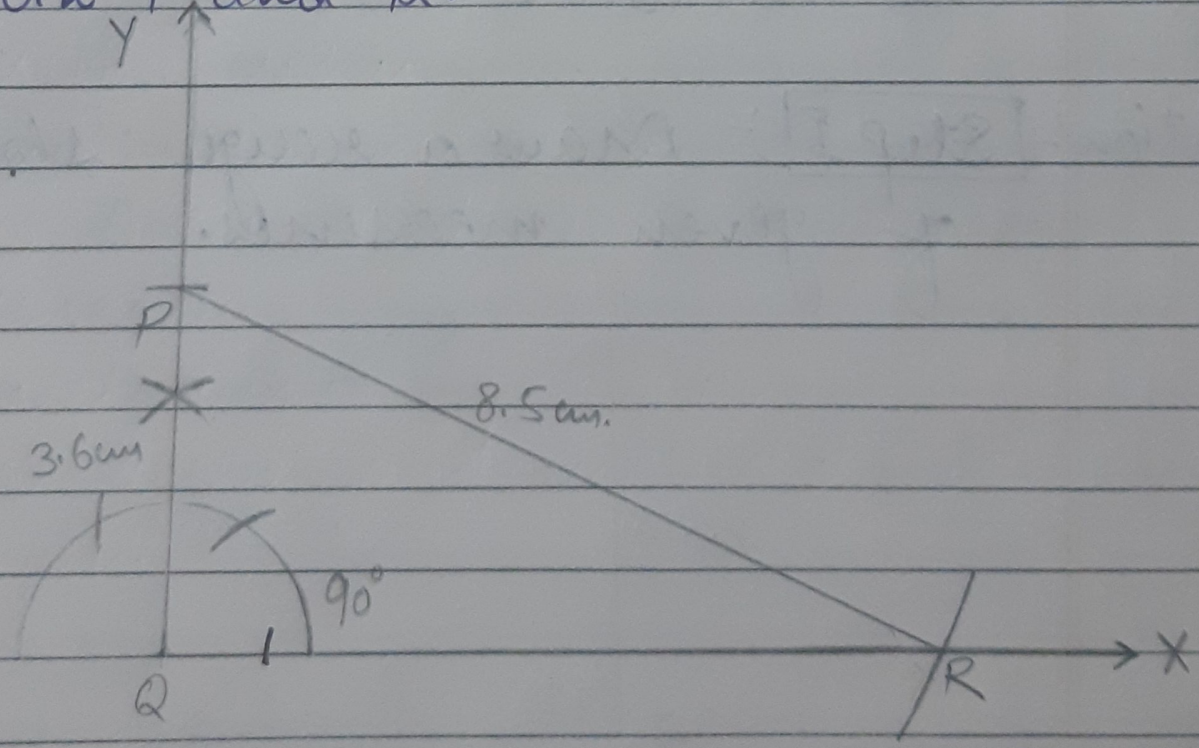
Rough Sketch

Step 2 :- Draw a ray QX.

Step 3 :- With the help of a compass, taking Q as centre, draw a ray QY making an angle of 90° with QX.

Step 4 :- With Q as centre and radius 3.6 cm. (=PQ), draw an arc intersecting ray QY at point P. Join P and Q.

Step 5 :- With P as centre and radius 8.5 cm (=PR), draw an arc intersecting ray QX at point R. Join P and R.



Hence, ΔPQR is the required triangle.

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④ Which of the following is a pythagorean triplet?

a) 1, 2, 3 b) 2, 3, 4

c) 4, 5, 6 d) 12, 13, 5 ✓

Note:- When sum of squares of two numbers is equals to square of third number, then it is a pythagorean triplet.

$(12)^2 + (5)^2 = 144 + 25 = 169 = (13)^2$

⑤. Construction of a unique triangle is not possible when.

a) three sides are given.

b) Two sides and an included angle are given.

c) ✓ Three angles are given.

d) Two angles and included sides are given.