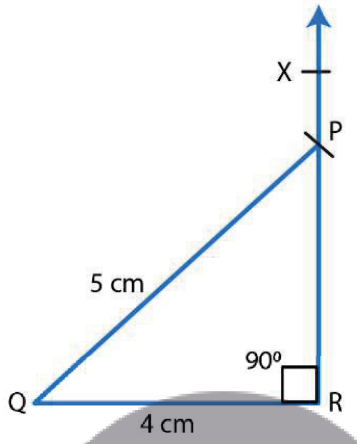
EXERCISE 17.5 PAGE NO: 16.3

1. Draw a right triangle with hypotenuse of length 5 cm and one side of length 4 cm.

Solution:

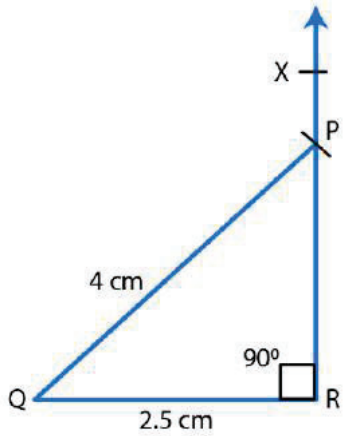


Steps of construction:

1. Draw a line segment QR = 4 cm.
2. Draw ∠QRX of measure 90°.
3. With center Q and radius PQ = 5 cm, draw an arc of the triangle to intersect ray RX at P.
4. Join PQ to obtain the desired triangle PQR.
5. PQR is the required triangle.

2. Draw a right triangle whose hypotenuse is of length 4 cm and one side is of length 2.5 cm.

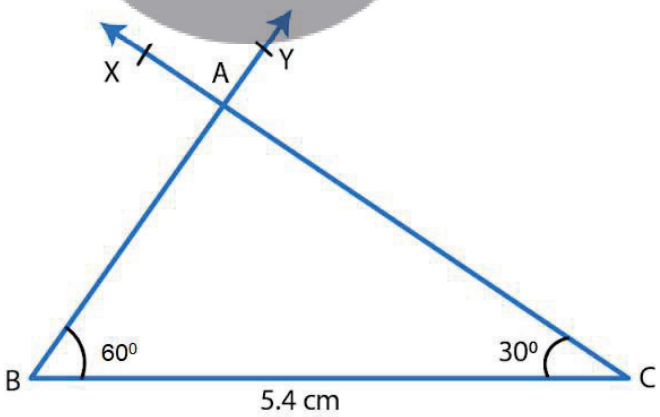
Solution:



Steps of construction:
1. Draw a line segment QR = 2.5 cm.
2. Draw ∠QRX of measure 90^o.
3. With center Q and radius PQ = 4 cm, draw an arc of the triangle to intersect ray RX at P.
4. Join PQ to obtain the desired triangle PQR.
5. PQR is the required triangle.

3. Draw a right triangle having hypotenuse of length 5.4 cm, and one of the acute angles of measure 30^o

Solution:

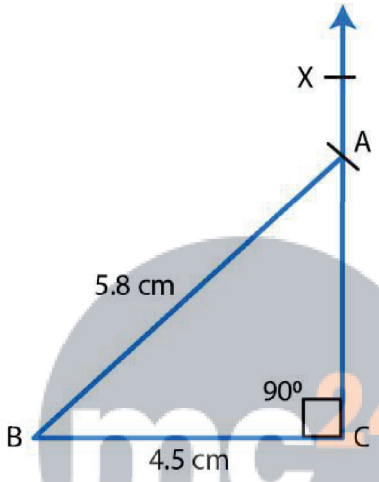


Let ABC be the right triangle at A such that hypotenuse BC = 5.4 cm. Let C = 30^o.
Therefore ∠A + ∠B + ∠C = 180^o
∠B = $180^o - 30^o - 90^o = 60^o$
Steps of construction:
1. Draw a line segment BC = 5.4 cm.

2. Draw angle CBY = 60^{o}
3. Draw angle BCX of measure 30^{o} with X on the same side of BC as Y.
4. Let BY and CX intersects at A.
5. Then ABC is the required triangle.

4. Construct a right triangle ABC in which AB = 5.8 cm, BC = 4.5 cm and ∠C = 90^{o}.

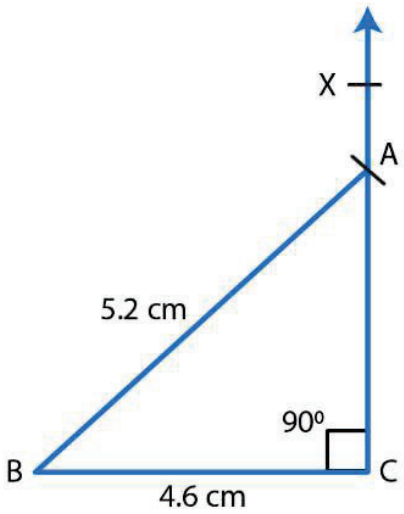
Solution:



Steps of construction:
1. Draw a line segment BC = 4.5 cm.
2. Draw ∠BCX of measure 90^{o}
3. With center B and radius AB = 5.8 cm, draw an arc of the triangle to intersect ray CX at A.
4. Join AB to obtain the desired triangle ABC.
5. ABC is the required triangle.

5. Construct a right triangle, right angled at C in which AB = 5.2 cm and BC= 4.6 cm.

Solution:



Steps of construction:

1. Draw a line segment BC = 4.6 cm.
2. Draw ∠BCX of measure 90^{o}
3. With center B and radius AB = 5.2 cm, draw an arc of the triangle to intersects ray CX at A.
4. Join AB to obtain the desired triangle ABC.
5. ABC is the required triangle.