RD SHARMA

Solutions

Class 7 Maths

Chapter 17

Ex 17.4

Q1. Construct △ABC in which BC= 4 cm, ∠B = 50° and ∠C = 70°.
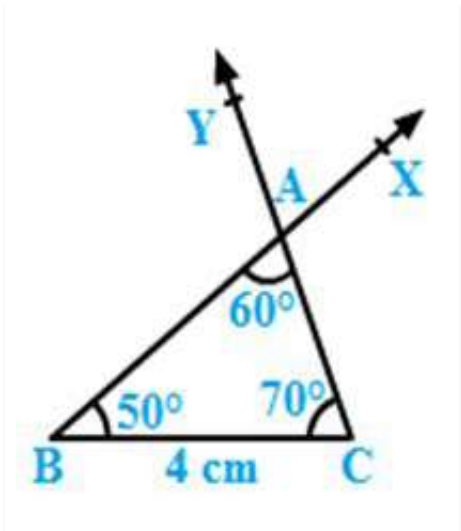
Steps of construction:

1. Draw a line segment BC of length 4 cm.
2. Draw ∠CBX such that ∠CBX = 50°.
3. Draw ∠BCY with Y on the same side of BC as X such that ∠BCY = 70°.
4. Let CY and BX intersect at A.
5. ABC is the required triangle.

Q2. Draw △ABC in which BC= 8 cm, ∠B = 50° and ∠A = 50°.

∠ABC + ∠BCA + ∠CAB = 180° ∠BCA = 180° − ∠CAB − ∠ABC ∠BCA = 180° − 100° = 80°
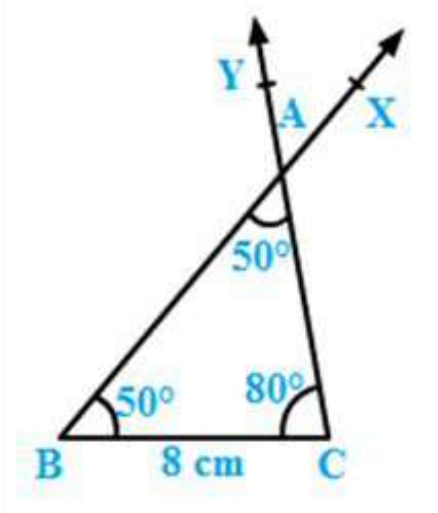
Steps of construction:

1. Draw a line segment BC of length 8 cm.
2. Draw ∠CBX such that ∠CBX = 50°.
3. Draw ∠BCY with Y on the same side of BC as X such that ∠BCY = 80°.
4. Let CY and BX intersect at A.

Q3. Draw △ABC in which ∠Q = 80°, ∠R = 55° and QR = 4.5 cm. Draw the perpendicular bisector of side QR.
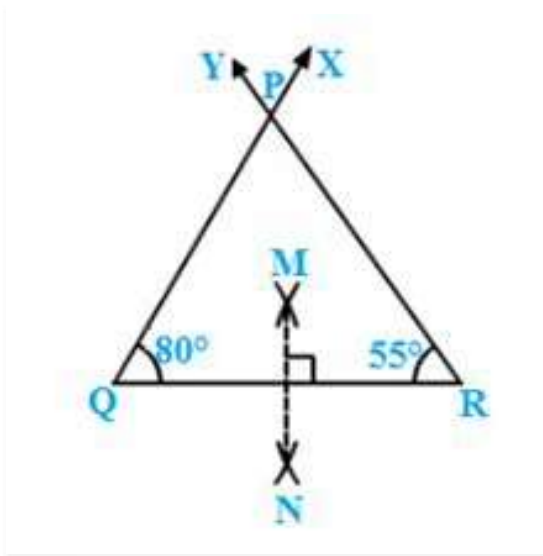
Steps of construction:

1. Draw a line segment QR = 4.5 cm.
2. Draw ∠RQX = 80° and ∠QRY = 55°.
3. Let QX and RY intersect at P so that PQR is the required triangle.
4. With Q as centre and radius more that 2.25 cm, draw arcs on either sides of QR.
5. With R as centre and radius more than 2.25 cm, draw arcs intersecting the previous arcs at M and N.
6. Join MN

MN is the required perpendicular bisector of QR.

Q4. Construct $\triangle ABC$ *in which AB = 6.4 cm, ∠A = 45° and ∠B = 60°*
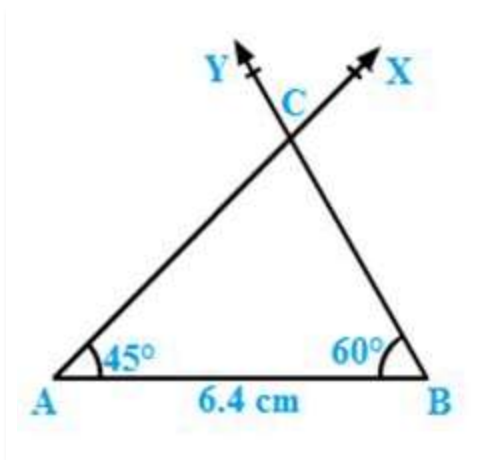
Steps of construction:

Draw a line segment AB = 6.4 cm.

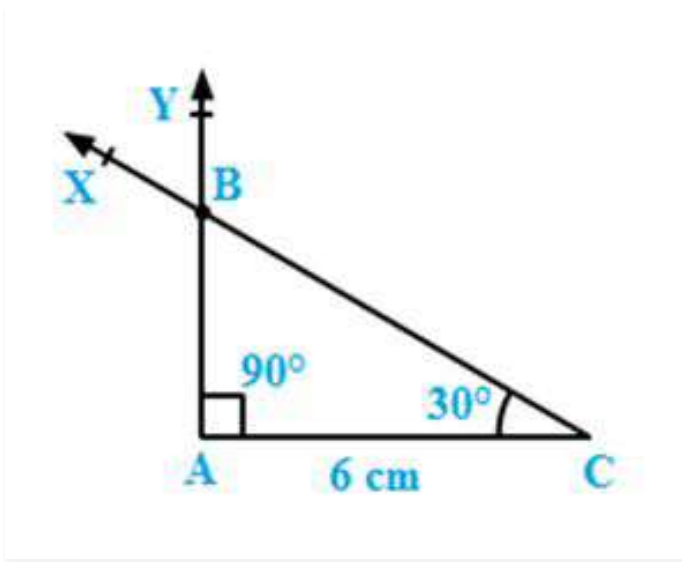Draw ∠BAX = 45°.

Draw ∠ABY with Y on the same side of AB as X such that ∠ABY = 60°.

Let AX and BY intersect at C.

ABC is the required triangle.

Q5. Draw $\triangle ABC$ *in which AC= 6 cm, ∠A = 90° and ∠B = 60°.*

$\angle A + \angle B + \angle C = 180°$
Therefore $\angle C = 180° - 60° - 90° = 30°$

Steps of construction:

1. Draw a line segment AC = 6 cm.
2. Draw ∠ACX = 30°.
3. Draw ∠CAY with Y on the same side of AC as X such that ∠CAY = 90°.
4. Join CX and AY. Let these intersect at B.

ABC is the required triangle where angle ∠ABC = 60°.