Question 1.

Construct a quadrilateral PQRS where PQ = 4.5 cm, QR = 6 cm, RS = 5.5 cm, PS = 5 cm and PR = 6.5 cm.

Solution:

Steps of constructions :

(i) Draw a line segment PR = 6.5 cm.

(ii) With centre P and radius 4.5 cm and with centre R and radius 6 cm draw arcs intersecting each other at Q.

(iii) Join PQ and QR.

(iv) Similarly with centre P and radius 5 cm and with centre R and radius 5.5 cm, draw arcs intersecting each other at S.

(v) Join PS and SR.

PQRS is the required quadrilateral.
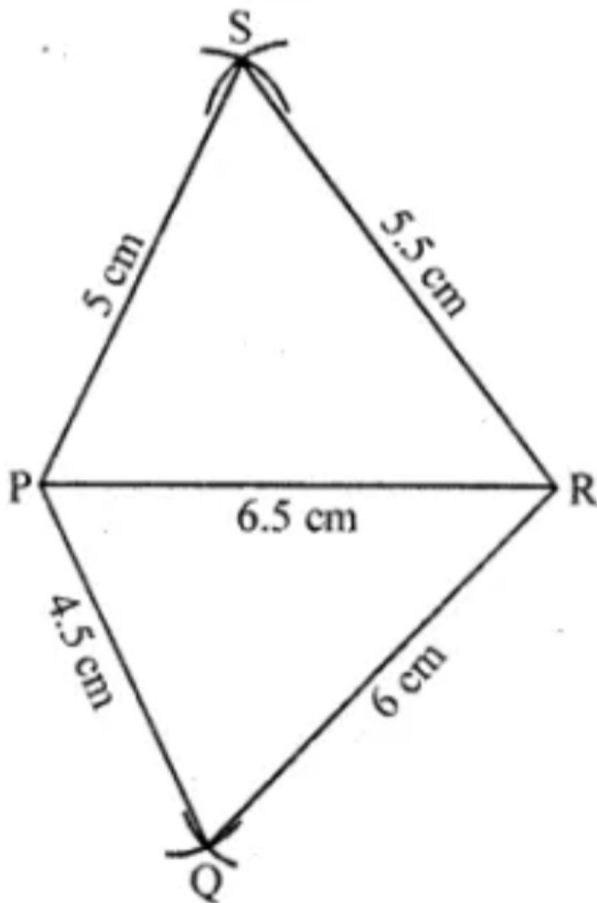
Question 2.

Construct a quadrilateral ABCD in which AB = 3·5 cm, BC = 5 cm, CD = 5·6 cm, DA = 4 cm and BD = 5·4 cm

Solution:

Steps of construction :

(i) Draw AB = 3·5 cm.

(ii) With A as centre and radius = 4 cm, draw an arc with B as centre and radius = 5·4 cm draw an arc to meet the previous arc at D. Join AD andBD.

(iii) With B as centre and radius = 5 cm, draw an arc With D as centre and radius = 5·6 cm, draw an arc to meet the previous arc at C.

(iv) Join BC and CD, then ABCD is the required quadrilateral.
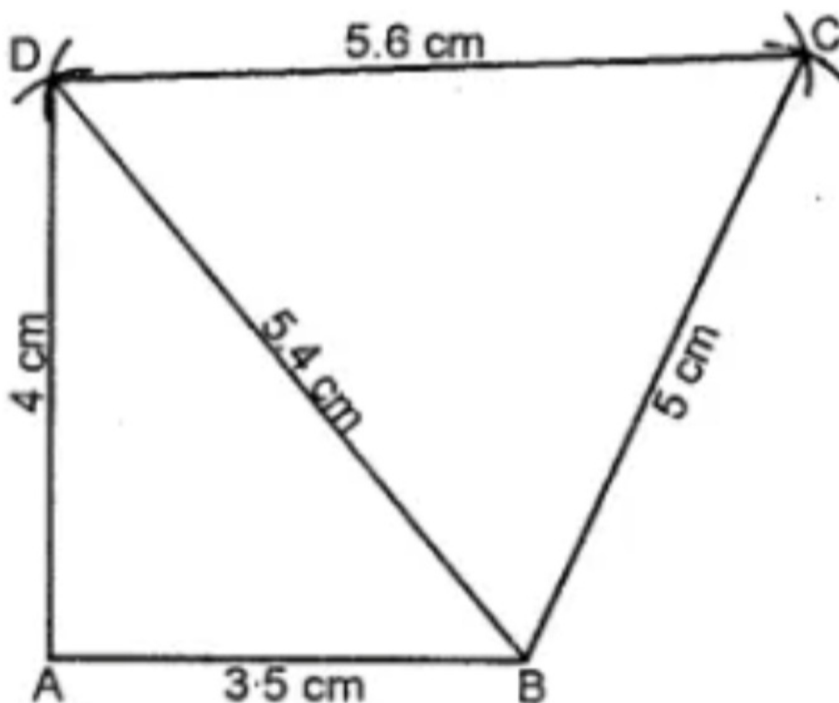
Question 3.

Construct a quadrilateral PQRS in which PQ = 3 cm, QR = 2·5 cm, PS = 3·5 cm, PR = 4 cm and QS = 5 cm.

Solution:

Steps of construction :

(i) Draw PQ = 3 cm.

(ii) With P as centre and radius = 4 cm,

draw an arc with Q as centre and radius = 2·5 cm

draw an arc to meet the previous arc at R.

Join PR and QR.

(iii) With P as centre and radius = 3·5 cm,

draw an arc. With Q as centre and radius = 5 cm,

draw an arc to meet the previous arc at S.

(iv) Join PS, QS and SR.

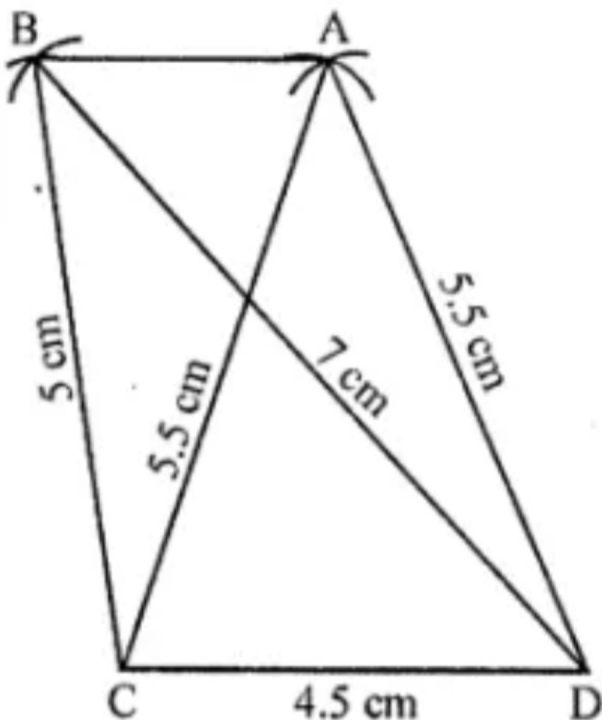(v) Hence, PQRS is the required quadrilateral.
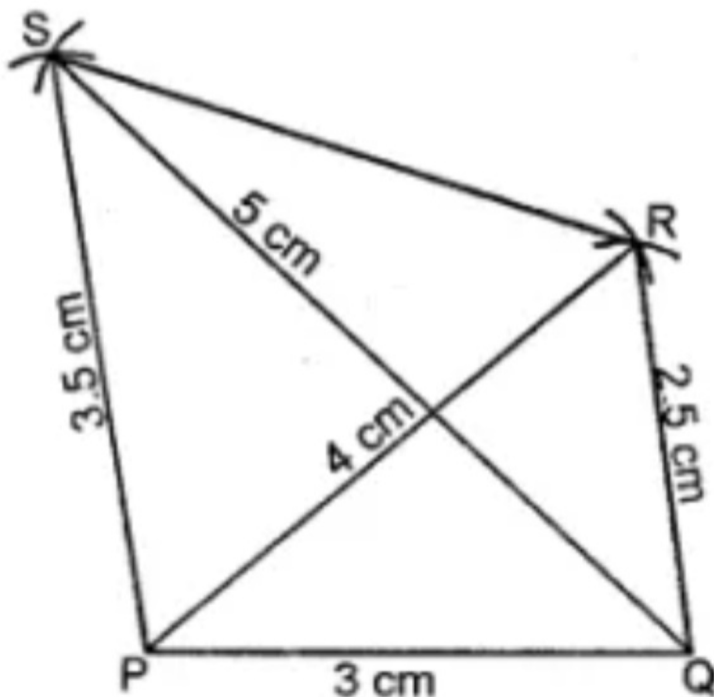
Question 4.

Construct a quadrilateral ABCD such that BC = 5 cm, AD = 5.5 cm, CD = 4.5 cm, AC = 7 cm, and BC = 5.5 cm.

Solution:

Steps of construction :

(i) Draw a line segment CD = 4.5 cm.

(ii) With centre C and radius of 5.5 cm and with centre D

and radius 7 cm draw arcs intersecting each other at B.

(iii) Join BC and BD.

(iv) Similarly with centre C and radius 5.5 cm

and with centre D and radius 5.5 cm,

draw arcs intersecting each other at A.

(v) Join AC and AD.

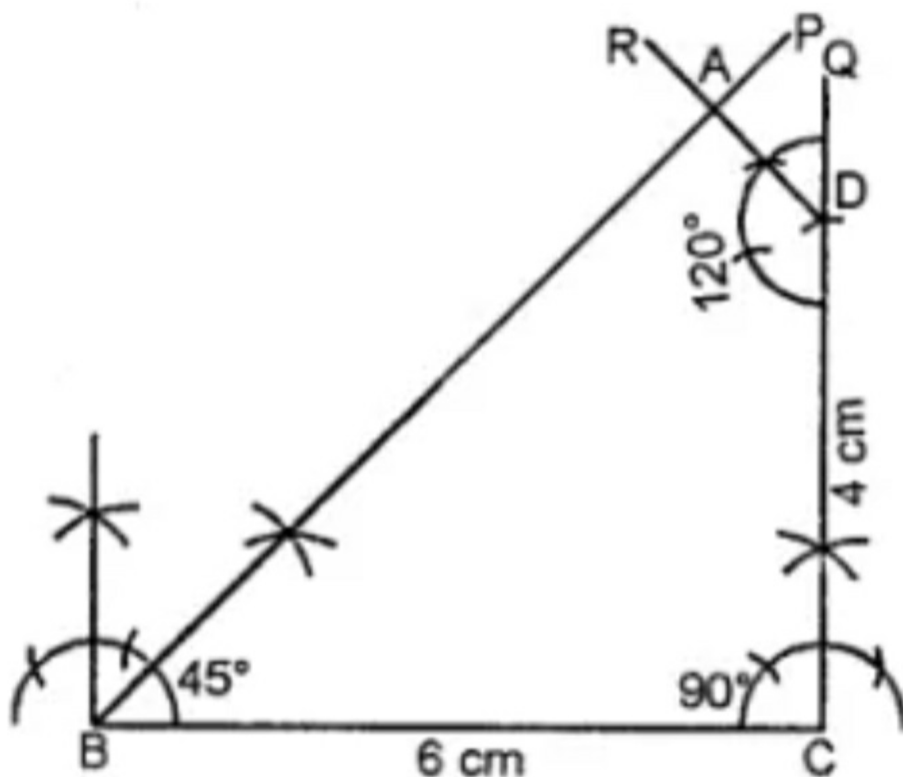(vi) Join AB.

ABCD is the required quadrilateral.

Question 5.

Construct a quadrilateral ABCD given that BC = 6 cm, CD = 4 cm, ∠B = 45°, ∠C = 90° and ∠D = 120°.

Solution:

Steps of construction :

(i) Draw BC = 6 cm.

(ii) At B, construct ∠CBP = 45°.

(iii) At C, construct ∠BCQ = 90°

(iv) From CQ, cut off CD = 4 cm.

(v) At D, construct ∠CDR = 120°.

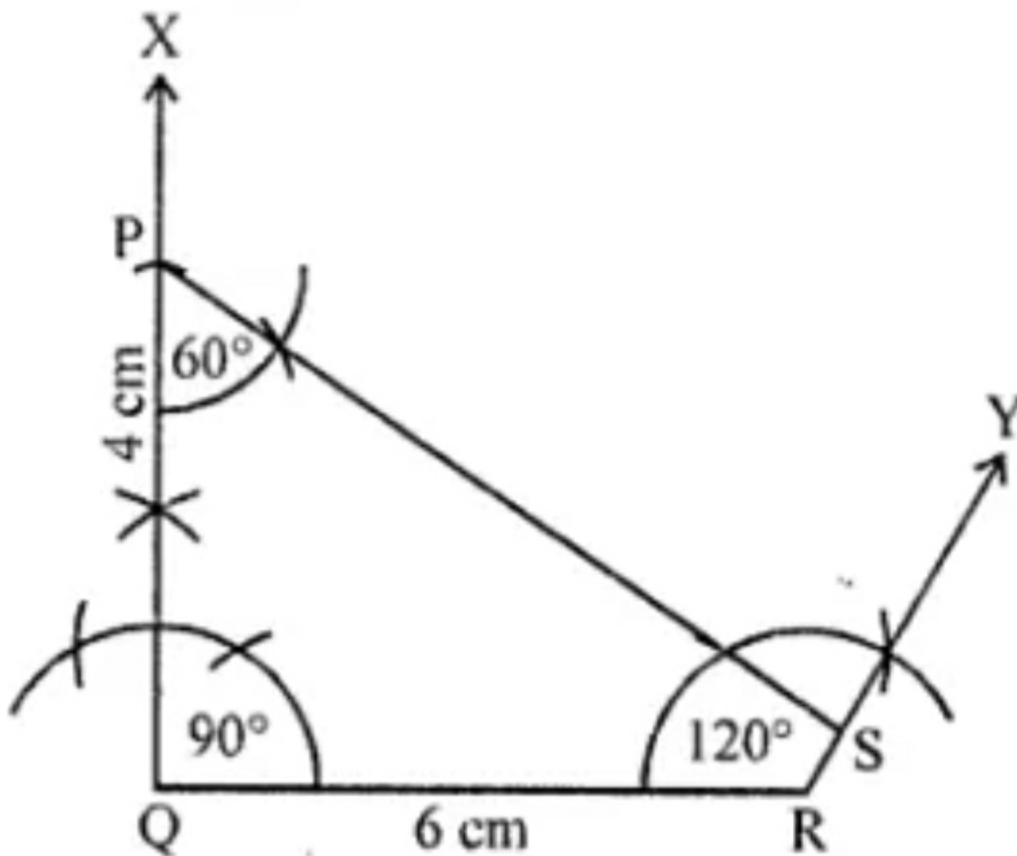(vi) Let BP and DR meet at A.

Then ABCD is the required quadrilateral.

Question 6.

Construct a quadrilateral PQRS where PQ = 4 cm, QR = 6 cm, ∠P = 60°, ∠Q = 90° and ∠R = 120°.

Solution:

Steps of construction :

(i) Draw a line segment QR = 6 cm.

(ii) At Q, draw a ray QX making an angle of 90° and cut off QP = 4 cm.

(iii) At P, draw a ray making an angle of 60° and at R, a ray making an angle 120° which meet each other at S.
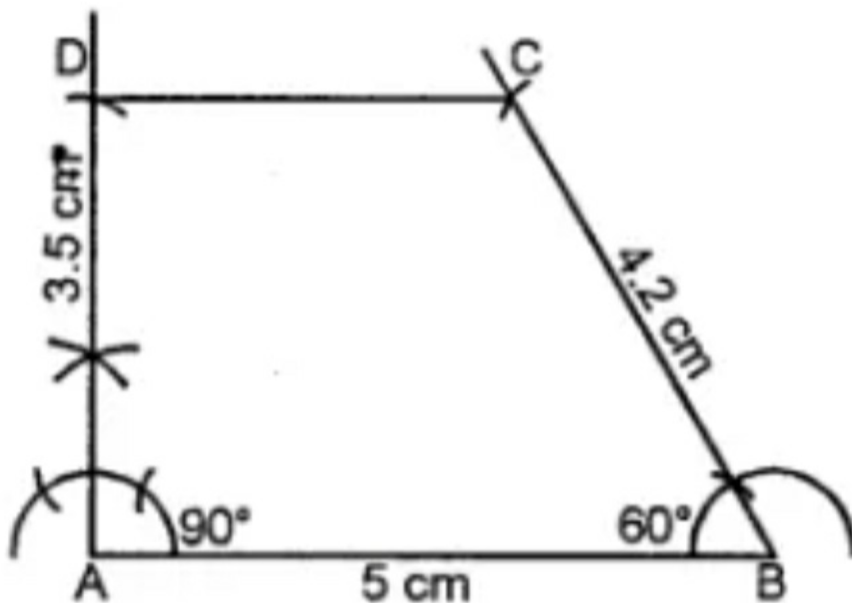
PQRS is the required quadrilateral.

Question 7.

Construct a quadrilateral ABCD such that AB = 5 cm, BC = 4·2 cm, AD = 3·5 cm, ∠A = 90°, and ∠B = 60°

Solution:

Steps of construction :

(i) Draw AB = 5 cm.

(ii) At A, construct angle A = 90°

(iii) At B, construct angle B = 60°

(iv) With B as centre and 4·2 cm as radius, cut off ∠B atC.

(v) With A as centre and 3·5 cm as radius, cut off ∠A at D.

(vi) Join CD. Then ABCD is the required quadrilateral.

Question 8.

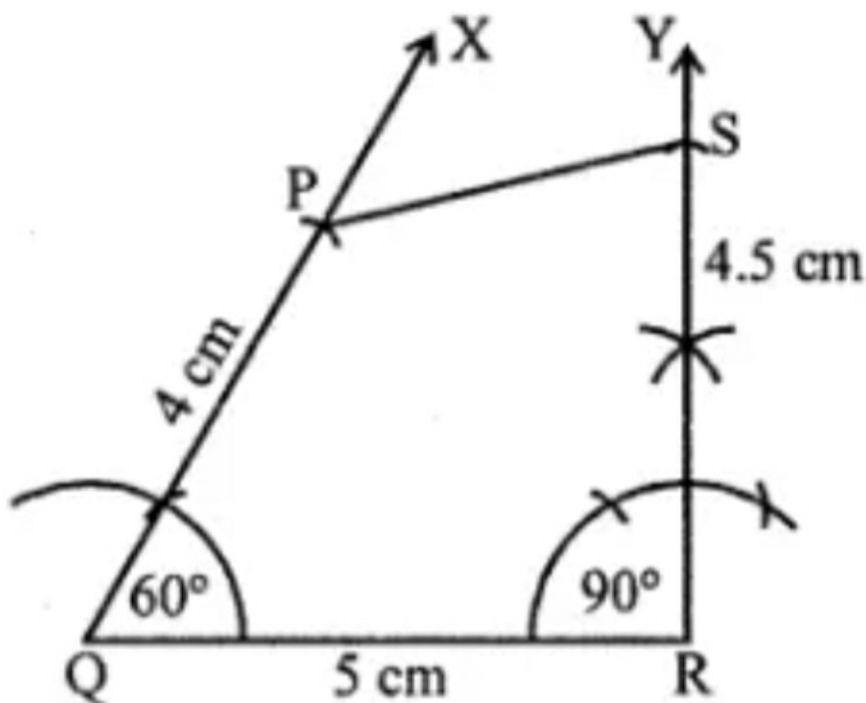Cosntruct a quadrilateral PQRS where PQ = 4 cm, QR = 5 cm, RS = 4.5 cm, ∠Q = 60° and ∠R = 90°.

Solution:

Steps of construction :

(i) Draw a line segment QR = 5 cm.

(ii) At Q, draw a ray QX making an angle of 60° and cut off QP = 4 cm.

(iii) At R, draw a ray RY making an angle of 90° and cut off RS. = 4.5 cm.

(iv) Join PS.

PQRS is the required quadrilateral.

Question 9.

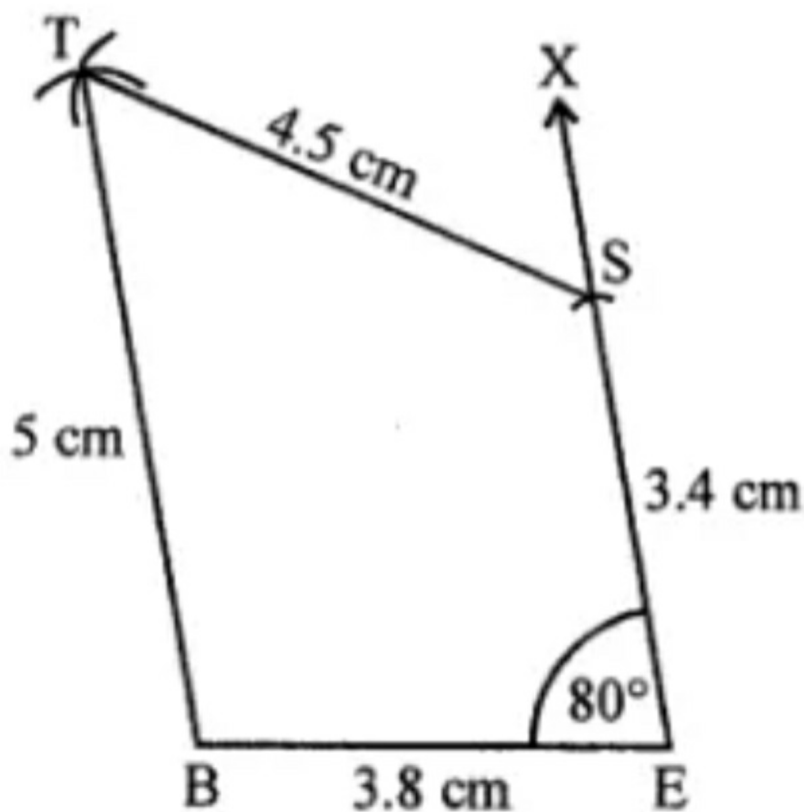Construct a quadrilateral BEST where BE = 3.8 cm, ES = 3.4 cm, ST = 4.5 cm, TB = 5 cm and ∠E = 80°.

Solution:

Steps of construction :

(i) Draw a line segment BE = 3.8 cm.

(ii) At E, draw a ray EX making an angle of 80° and cut off ES = 3.4 cm.

(iii) With centre B and radius 5 cm and with centre S with radius 4.5 cm, draw arcs intersecting each other at T.

(iv) Join TB and TS.

BEST is the required quadrilateral.

Question 10.

Construct a quadrilateral ABCD where AB = 4·5 cm, BC = 4 cm, CD = 3·9 cm, AD = 3·2 cm and ∠B = 60°.

Solution:

Steps of construction :

(i) Draw AB = 4·5 cm.

(ii) At B, construct ∠ABP = 60°.

(iii) From BP, cut of ∠BC = 4 cm.

(iv) With C as centre, and 3·9 cm as radius draw an arc.

(v) With A as centre and 3·2 cm as radius, draw an arc to meet the previous arc at D.

(vi) Join AD and CD.