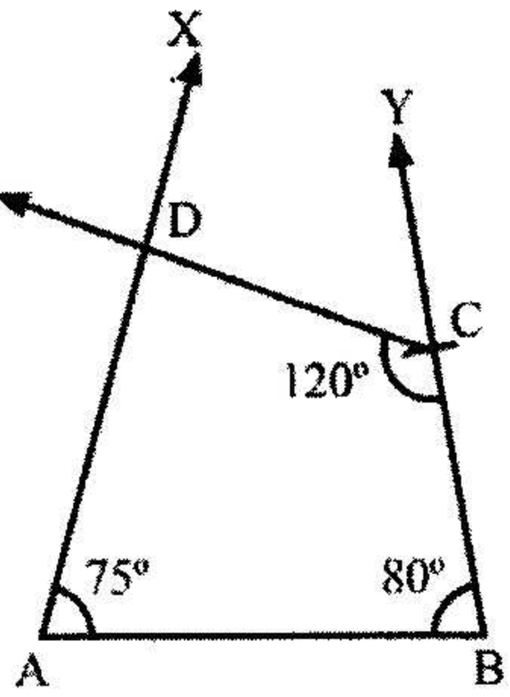
Exercise 18.5

Q.1 Construct a quadrilateral ABCD given that AB=4 BC= 3 cm, $\angle A = 75°$, $\angle B = 80°$, $\angle C = 120°$.

Sol



Solutions:

Steps of construction:

Step I: Draw $AB = 4$ cm.

Step II: Construct $\angle XAB = 75°$ at A and $\angle ABY = 80°$ at B.

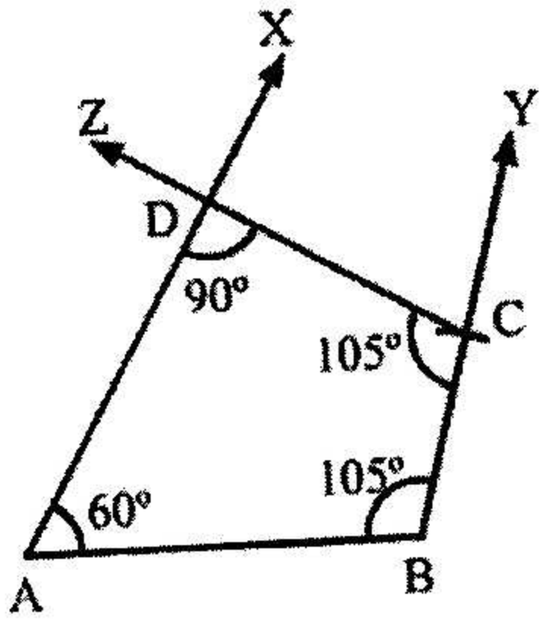
Step III: With B as the center and radius 3 cm, cut off $BC = 3$ cm.

Step IV: At C, draw $\angle BCZ = 120°$ such that it meets AX at D.

The quadrilateral so obtained is the required quadrilateral.

Q.2 Construct a quadrilateral ABCD, where AB= 5.5 cm BC=3.7 cm, $\angle A = 60°$, $\angle B = 105°$ and $\angle D = 90°$.

Sol:



We know that the sum of all the angles in a quadrilateral is 360.

i.e. $\angle A + \angle B + \angle C + \angle D = 360°$

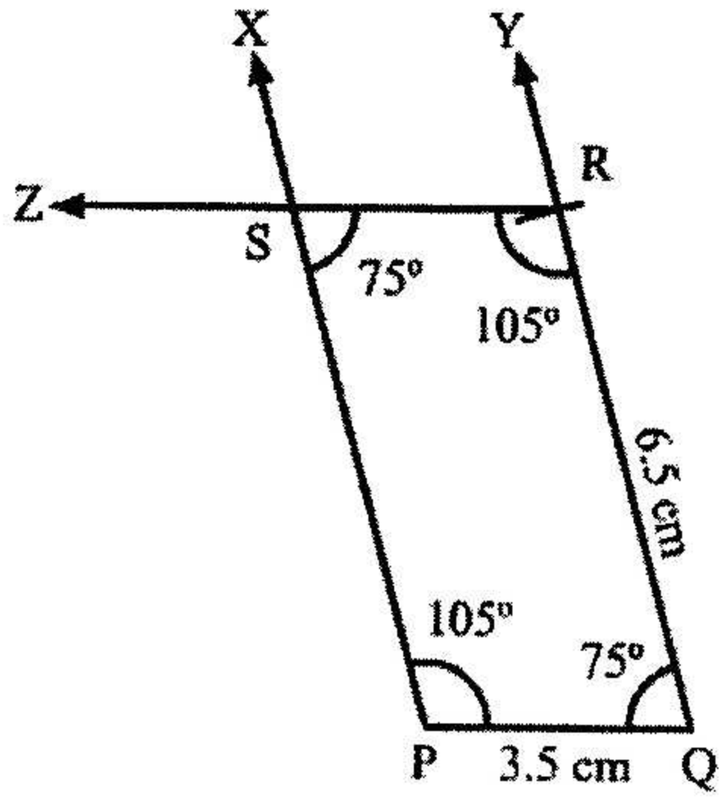
$\angle C = 105°$

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Q.3 Construct a quadrilateral PQRS, where PQ = 3.5 cm
QR = 6.5 cm, ∠P = ∠R = 105° and ∠S = 75°.

Sol:



We know that the sum of all the angles in a quadrilateral is 360.

i.e., $\angle P + \angle Q + \angle R + \angle S = 360°$

$\angle Q = 75°$

Solutions:

Steps of construction:

Step I: Draw $PQ = 3.5$ cm.

Step II: Construct $\angle XPQ = 75°$ at P and $\angle PQY = 75°$ at Q.

Step III: With Q as the center and radius 6.5 cm, cut off $QR = 6.5$

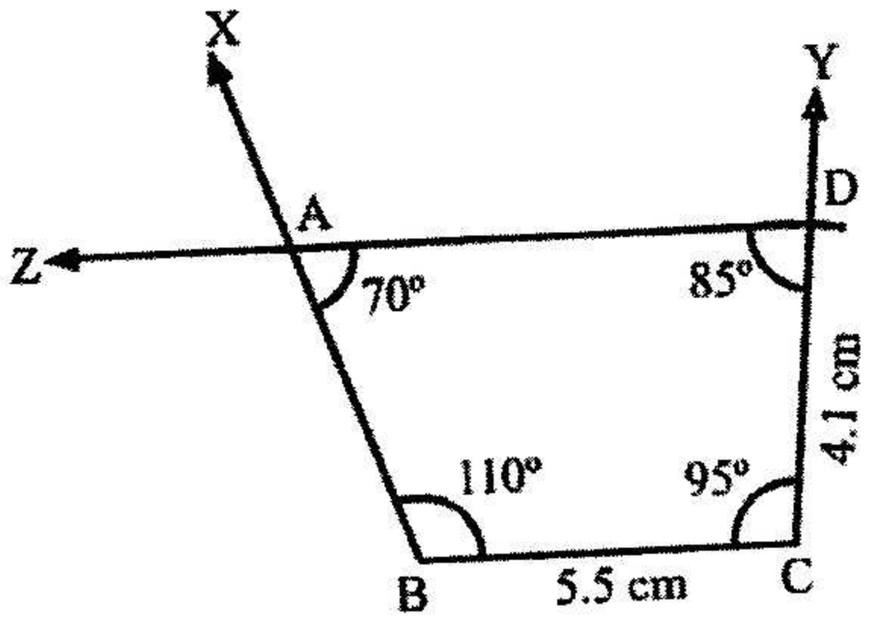
Step IV: At R. draw $\angle QRZ = 105°$ such that it meets PX at S.

The quadrilateral so obtained is the required quadrilateral.

Q.4 Construct a quadrilateral ABCD, when BC = 5.5 cm
CD = 4.1 cm, ∠A = 70°, ∠B = 110° and ∠D = 85°

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We know that the sum of all the angles in a quadrilateral is 360. i.e.

i.e. $\angle A + \angle B + \angle C + \angle D = 360°$

$\angle C = 95°$

Solutions:

Steps of construction:

Step I: Draw $BC = 5.5$ cm.

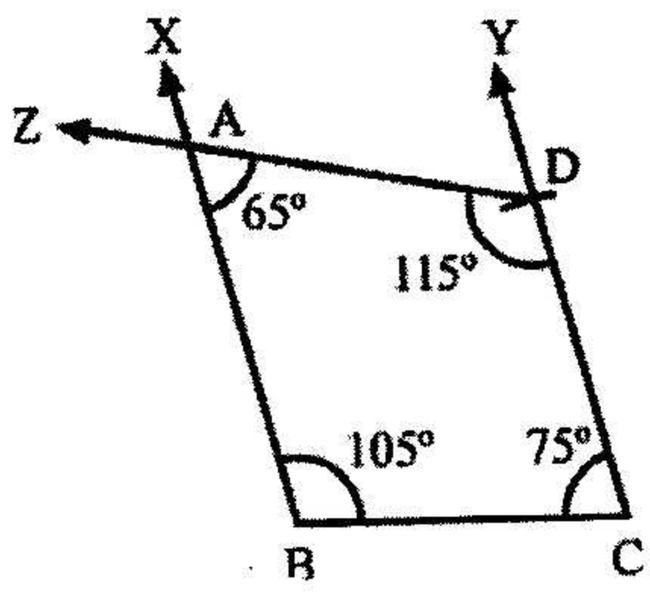
Step II: Construct $\angle XBC = 110°$ at A and $\angle BCY = 95°$.

Step III: With C as the center and radius 4.1 cm, cut off $CD = 4.1$ cm.

Step IV: At D, draw $\angle CDZ = 85°$ such that it meets BY at A.

The quadrilateral so obtained is the required quadrilateral.

Q.5 Construct a quadrilateral ABCD, where $\angle A = 65°$ and $\angle B = 105°$, $\angle C = 75°$, $BC = 5.7$ cm, $CD = 6.8$ cm.



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We know that the sum of all the angles in a quadrilateral is 360. i.e

i.e. $\angle A + \angle B + \angle C + \angle D = 360°$

$\angle D = 115°$

Solutions:

Steps of Construction:

Step I: Draw $BC = 5.7$ cm.

Step II: Construct $\angle XBC = 105°$ at B and $\angle BCY = 105°$ at C.

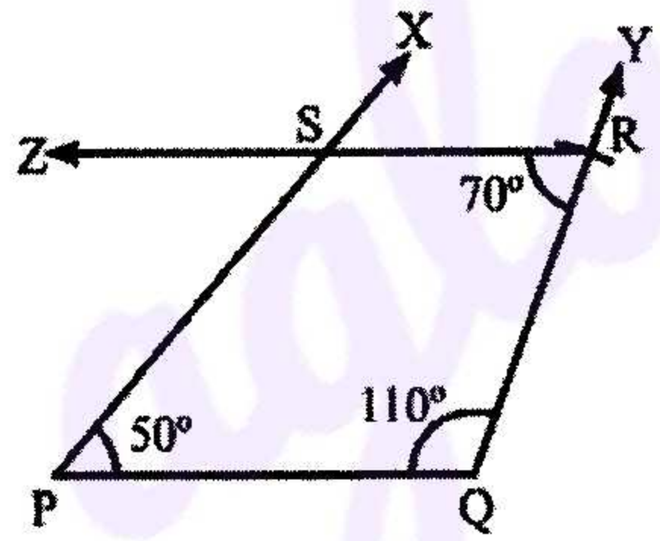
Step III: With C as the center and radius 6.8 cm, cut off $CD = 6.8$ cm.

Step IV: At D, draw $\angle CDZ = 115°$ such that it meets BY at A.

The quadrilateral so obtained is the required quadrilateral.

Q6 Construct a quadrilateral PQRS, in which PQ = 4cm, QR = 5 cm, $\angle P = 50°$, $\angle Q = 110°$ and $\angle R = 70°$

Sol



Solutions:

Steps of construction:

Step I: Draw $PQ = 4$ cm.

Step II: Construct $\angle XPQ = 50°$ at P and $\angle PQY = 110°$ at Q.

Step III: With Q as the center and radius 5 cm, cut off $QR = 5$ cm.

Step IV: At R, draw $\angle QRZ = 70°$ such that it meets PX at S.

The quadrilateral so obtained is the required quadrilateral.

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