



## MATHS

## **BOOKS - ICSE**

# CONSTRUCTION OF POLYGONS



1. Construct a quadrilateral ABCD, when :

 $AB = 3.2cm, BC = 5.2cm, CD = 6.2cm, DA = 4.2cm \mathrm{and} BD = 5.2cm$ 

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2. Construct a quadrilateral ABCD, when :

 $AB=7.2cm, BC=5.8cm, CD=6.3cm, AD=4.3cm {
m and angle} A=75^\circ$ 





Angle $A = 90^{\circ}$ ,

AB = 4.6cm, BD = 6.4cm, AC = 6.0cm, and CD = 4.2cm.



4. Construct a quadrilateral ABCD, when :

 $AB=3.8cm, AC=4.8cm, AD=4.3cm, \mathrm{angle}A=105^{\,\circ}\,\mathrm{and}\,\mathrm{angle}B=60$ 

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5. Construct a quadrilateral ABCD, when :

 $BC=7.5cm, AC=5.8cm, AD=3.6cm, CD=4.2cm {
m and angle}A=120^\circ$ 



6. Construct a quadrilateral ABCD, when :

AD = AB = 4cm, BC = 2.8cm, CD = 2.5cmand angle $BAD = 45^{\circ}$ .

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7. Construct a quadrilateral ABCD, when :

AB = 6.3cm, BC = CD = 4.2cmand $\angle ABC = \angle BCD = 90^{\circ}.$ 

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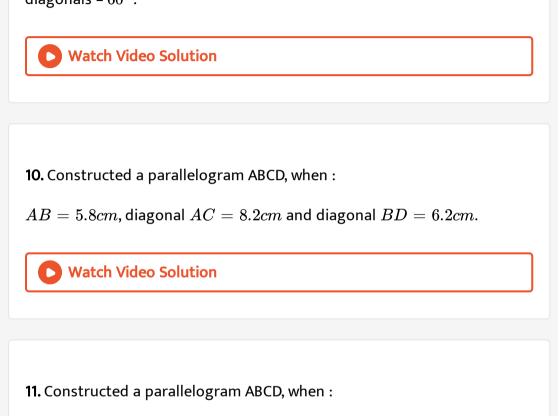
8. Constructed a parallelogram ABCD, when :

AB = 4.4cm, AD = 6.2cm and AC = 4.8cm.





Diagonal AC = 6.4cm, diagonal BD = 8.2cm and angle between the diagonals =  $60^{\circ}$ .



 $AB=6.0cm, AD=5.0cm {
m and} ar{a}A=45^\circ$ 

12. Constructed a parallelogram ABCD, when :

Base AB = 6.5cm, BC = 4cm and the altitude corresponding to AB = 3.1cm.



13. Constructed a parallelogram ABCD, when :

 $AB=4.5cm, \angle B=120^{\circ}$  and the distance between AB and DC = 3.0cm.

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14. Constructed a parallelogram ABCD, when :

Base BC = 5.6cm, diagonal BD = 6.5cm and altitude = 3.2cm.



15. Construct a rectangle ABCD, when :

Its sides are 6.0cm and 7.2cm.

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**16.** Construct a rectangle ABCD, when :

One side = 4cm and one diagonal is 5cm. Measure the length of other

side.

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17. Construct a rectangle ABCD, when :

One diagonal = 6.0cm and the acute angle between the diagonals =  $45^{\circ}$ .



18. Construct a rectangle ABCD, when :

Area =  $24cm^2$  and base = 4.8cm.



19. Construct a rectangle ABCD, when :

Area =  $36cm^2$  and height = 4.5cm.

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20. Construct a trapezium ABCD, when :

 $AB=4.8cm, BC=6.8cm, CD=5.4cm, \mathrm{angle}B=60^\circ\mathrm{and}AD/BC.$ 



21. Construct a trapezium ABCD, when :

 $AB=4.8cm, BC=6.8cm, CD=5.4cm, \mathrm{angle}B=60^\circ\mathrm{and}AD/BC.$ 

22. Construct a rhombus ABCD, when :

Its side =  $6cmand \angle A = 60^{\circ}$ .

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23. Construct a rhombus ABCD, when :

One side = 5.4cm and one diagonal is 7.0cm.



24. Construct a rhombus ABCD, when :

Diagonal AC = 6.3cm and diagonal BD = 5.8cm.

25. Construct a rhombus ABCD, when :

One side = 5.0cm and height = 2.6cm.



26. Construct a rhombus ABCD, when :

 $\angle A = 60^{\circ}$  and height = 3.5cm.

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27. Construct a rhombus ABCD, when :

Diagonal AC = 6.0cm and height = 3.5cm.



28. Construct a square ABCD, when :

One side = 4.5cm.



29. Construct a square ABCD, when :

One diagonal = 5.4*cm*.

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30. Construct a square ABCD, when :

Perimeter = 24cm.

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**31.** Construct a rhombus, having given one side = 4.8cm and one angle =

 $75^{\circ}$ .

32. Construct a regular hexagon of side

(i) 2.5*cm* 

(ii) 3.2*cm*.

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**33.** Using ruler and compasses only, construct the quadrilateral ABCD, having given AB = 5cm, BC = 2.5cm, CD = 6cm,  $angleBAD = 90^{\circ}$  and the diagonal AC = 5.5cm.

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**34.** Using ruler and compasses only, construct a trapezium ABCD, in which the parallel sides AB and DC are 3.3cm aprt, AB = 4.5cm, angle  $A = 120^{\circ}$ , BC = 3.6cm and angle B is obtuse.



**35.** Using ruler and compasses only, construct the quadrilateral ABCD, having given AB = 5cm, BC = 2.5cm, CD = 6cm,  $\angle BAD = 90^{\circ}$  and diagonal BD = 5.5cm.

**36.** Using ruler and compasses only, construct a parallelogram ABCD, using the following data: AB = 6cm,  $AD = 3cmand \angle DAB = 45^{\circ}$ . If the bisector of  $\angle DAB$  meets DC at P, prove that  $\angle APB$  is a right angle.

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37. Draw parallelogram ABCD with the following data :

 $AB=6cm, AD=5cm {
m and} ar DAB=45^\circ.$ 

Let AC and DB in O let E be the mid-point of BC. Join OE. Prove that :

(i) OE/AB

(ii) 
$$OE=rac{1}{2}AB.$$

38. Using ruler and compasses only, construct a rectangle each of whose

diagonals measure 6cm and diagonals intersect at an angle of  $45^{\circ}$ .



39. Construct a quadrilateral ABCD, when :

AB = 3.2cm, BC = 5.2cm, CD = 6.2cm, DA = 4.2cm and BD = 5.2cm

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40. Construct a quadrilateral ABCD, when :

 $AB=7.2cm, BC=5.8cm, CD=6.3cm, AD=4.3cm {
m and angle} A=75^\circ$ 

41. Construct a quadrilateral ABCD, when :

Angle $A = 90^{\circ}$ ,

AB = 4.6cm, BD = 6.4cm, AC = 6.0cm, and CD = 4.2cm.



42. Construct a quadrilateral ABCD, when :

 $AB=3.8cm, AC=4.8cm, AD=4.3cm, \mathrm{angle}A=105^\circ \mathrm{and} \mathrm{angle}B=60$ 

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**43.** Construct a quadrilateral ABCD, when :

BC=7.5cm, AC=5.8cm, AD=3.6cm, CD=4.2cmand angle $A=120^\circ$ 

44. Construct a quadrilateral ABCD, when :

AD = AB = 4cm, BC = 2.8cm, CD = 2.5cmand angle $BAD = 45^{\circ}$ .



45. Construct a quadrilateral ABCD, when :

AB = 6.3cm, BC = CD = 4.2cmand $\angle ABC = \angle BCD = 90^{\circ}.$ 

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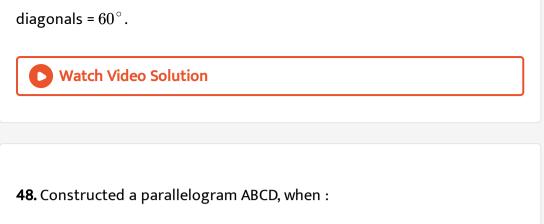
46. Constructed a parallelogram ABCD, when :

AB = 4.4cm, AD = 6.2cm and AC = 4.8cm.



47. Constructed a parallelogram ABCD, when :

Diagonal AC = 6.4cm, diagonal BD = 8.2cm and angle between the



AB = 5.8cm, diagonal AC = 8.2cm and diagonal BD = 6.2cm.

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49. Constructed a parallelogram ABCD, when :

 $AB=6.0cm, AD=5.0cm {
m and} {oxedsymbol{\angle}} A=45^\circ$ 

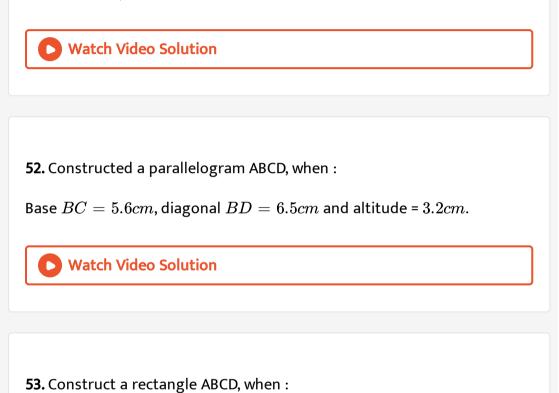
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**50.** Constructed a parallelogram ABCD, when :

Base AB = 6.5cm, BC = 4cm and the altitude corresponding to AB = 3.1cm.

51. Constructed a parallelogram ABCD, when :

 $AB=4.5cm, \angle B=120^{\circ}$  and the distance between AB and DC = 3.0cm.

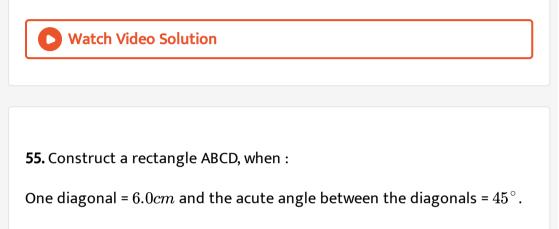


Its sides are 6.0cm and 7.2cm.



**54.** Construct a rectangle ABCD, when :

One side = 4cm and one diagonal is 5cm. Measure the length of other side.



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56. Construct a rectangle ABCD, when :

Area =  $24cm^2$  and base = 4.8cm.

57. Construct a rectangle ABCD, when :

Area =  $36cm^2$  and height = 4.5cm.

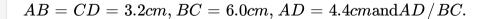


58. Construct a trapezium ABCD, when :

 $AB = 4.8cm, BC = 6.8cm, CD = 5.4cm, ext{angle}B = 60^{\circ} ext{and}AD/BC.$ 

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59. Construct a trapezium ABCD, when :





60. Construct a rhombus ABCD, when :

Its side =  $6cmand \angle A = 60^{\circ}$ .



61. Construct a rhombus ABCD, when :

One side = 5.4cm and one diagonal is 7.0cm.

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62. Construct a rhombus ABCD, when :

Diagonal AC = 6.3cm and diagonal BD = 5.8cm.

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63. Construct a rhombus ABCD, when :

One side = 5.0cm and height = 2.6cm.

64. Construct a rhombus ABCD, when :

 $\angle A = 60^{\circ}$  and height = 3.5cm.



65. Construct a rhombus ABCD, when :

Diagonal AC = 6.0cm and height = 3.5cm.

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66. Construct a square ABCD, when :

One side = 4.5cm.



67. Construct a square ABCD, when :

One diagonal = 5.4cm.



68. Construct a square ABCD, when :

Perimeter = 24cm.

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**69.** Construct a rhombus, having given one side = 4.8cm and one angle =

 $75^{\,\circ}$  .

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#### 70. Construct a regular hexagon of side

(i) 2.5*cm* 

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**71.** Using ruler and compasses only, construct the quadrilateral ABCD, having given AB = 5cm, BC = 2.5cm, CD = 6cm,  $angleBAD = 90^{\circ}$  and the diagonal AC = 5.5cm.

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**73.** Using ruler and compasses only, construct the quadrilateral ABCD, having given AB = 5cm, BC = 2.5cm, CD = 6cm,  $\angle BAD = 90^{\circ}$  and diagonal BD = 5.5cm.



74. Using ruler and compasses only, construct a parallelogram ABCD, using the following data: AB = 6cm,  $AD = 3cmand \angle DAB = 45^{\circ}$ . If the bisector of  $\angle DAB$  meets DC at P, prove that  $\angle APB$  is a right angle.

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 $AB = 6cm, AD = 5cm \text{and} \angle DAB = 45^{\circ}.$ 

Let AC and DB in O let E be the mid-point of BC. Join OE. Prove that :

(i) 
$$OE/AB$$

(ii) 
$$OE = \frac{1}{2}AB$$
.

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76. Using ruler and compasses only, construct a rectangle each of whose

diagonals measure 6cm and diagonals intersect at an angle of  $45^{\circ}$ .