



MATHS

BOOKS - SELINA MATHS (ENGLISH)

CONSTRUCTIONS (CIRCLES)

Exercise

1. Draw a circle of radius 3 cm. Mark a point P at a distance of 5 cm from the centre of the circle drawn. Draw two tangents PA and PB to

the given circle and find the length of each tangent.

A. 4cm

B. 6cm

C. 2cm

D. 7cm

Answer: A



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2. Draw a circle of diameter 9 cm. Mark a point at a distance of 7.5 cm from the centre of the circle. Draw tangents to the given circle from this exterior point. Measure the length of each tangent.

A. 7CM

B. 6 CM

C. 8 CM

D. 4 CM

Answer: B



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3. Draw a circle of radius 5 cm. Draw two tangents to this circle so that the angle between the tangents is 45°

Draw two radii of the circle so that they make an angle equal to $180^\circ - 45^\circ = 135^\circ$ at the centre of the circle.



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4. Draw a circle of radius 4.5 cm. Draw two tangents to this circle so that the angle between the tangents is 60° .



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5. Using ruler and compasses only, draw an equilateral triangle of side 4.5 cm and draw its inscribed circle. Measure the radius of the circle.

A. 1.6 CM

B. 2.8 CM

C. 3.2 CM

D. 2.6 CM

Answer: D



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6. Using ruler and compasses only,

Construct triangle ABC, having given $BC = 7$ cm, $AB - AC = 1$ cm and $\angle ABC = 45^\circ$



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7. Using ruler and compasses only, Inscribe a circle in the $\triangle ABC$ of each side equal to 6cm



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8. Using ruler and compasses only, draw an equilateral triangle of side 5 cm. Draw its inscribed circle. Measure the radius of the circle.

A. 2.7 CM

B. 1.8 CM

C. 1.4 CM

D. 0.5 CM

Answer: C



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9. Using ruler and compasses only.

Construct a triangle ABC with the following

data:

Base $AB = 6$ cm, $BC = 6.2$ cm and angle

$$CAB = 60^\circ$$



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10. Using ruler and compasses only.

Draw a right triangle where $AB=4$ cm , $BC=5$ cm

and angle $B = 90$ deg.



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11. Using ruler and compasses only.

Draw a perpendicular from O to AB which meets AB in D.



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12. Using ruler and compasses only construct a triangle ABC in which $BC = 4$ cm.

$\angle ACB = 45^\circ$ and perpendicular from A on

BC is 2.5 cm. Draw a circle circumscribing the

triangle ABC





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13. Perpendicular bisectors of the sides AB and AC of a triangle ABC meet at O .

What do you call the point ?



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14. Perpendicular bisectors of the sides AB and AC of a triangle ABC meet at O .

What is the relation between the distances OA , OB and OC ?



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15. Perpendicular bisectors of the sides AB and AC of a triangle ABC meet at O .

Does the perpendicular bisector of BC pass through O ?



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16. The bisectors of angles A and B of a scalene triangle ABC meet at O .

What is the point O called ?



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17. The bisectors of angles A and B of a scalene triangle ABC meet at O.

OR and OQ are perpendiculars drawn to AB and CA respectively. What is the relation between OR and OQ?



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18. The bisectors of angles A and B of a scalene triangle ABC meet at O.

What is the relation between angle ACO and angle BCO?



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19. Using ruler and compasses only, construct a triangle ABC in which $AB = 8$ cm, $BC = 6$ cm and $CA = 5$ cm.



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20. With I as centre, draw a circle which will inscribe in triangle of each side of the triangle equal to 4.3 cm.



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21. Construct an equilateral triangle ABC with side 6 cm. Draw a circle circumscribing the triangle ABC .



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22. Construct a circle, inscribing an equilateral triangle with side 5.6 cm.



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23. Draw a circle circumscribing a regular hexagon with side 5 cm.



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24. Draw a regular hexagon of side 5 cm.



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25. Construct a regular hexagon of side 4 cm.

Construct a circle circumscribing the hexagon.



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26. Draw a circle of radius 3.5 cm. Mark a point

P outside the circle at a distance of 6 cm from

the centre. Construct two tangents from P to

the given circle. Measure and write down the length of one tangent.

A. $AP=PB = 5.1 \text{ cm}$

B. $AP=PB = 4.2 \text{ cm}$

C. $AP=PB = 4.9 \text{ cm}$

D. $AP=PB = 3.5 \text{ cm}$

Answer: C



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27. Construct a triangle ABC in which base BC = 5.5 cm, AB = 6 cm and $\angle ABC = 120^\circ$

Construct a circle circumscribing the triangle ABC.



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28. Construct a triangle ABC in which base BC = 5.5 cm, AB = 6 cm and $\angle ABC = 120^\circ$

Draw a cyclic quadrilateral ABCD so that D is equidistant from B and C.





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29. Using a ruler and compasses only:

Construct a triangle ABC with the following data:

$$AB = 3.5\text{cm}, BC = 6\text{cm} \text{ and } \angle ABC = 120^\circ$$



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30. Construct a $\triangle ABC$ with $BC = 6.5\text{ cm}$, $AB = 5.5\text{ cm}$, $AC = 5\text{ cm}$. Construct the incircle of the

triangle. Measure and record the radius of the incircle.

A. 1.6 CM

B. 2.3 CM

C. 2.7 CM

D. 1.9 CM

Answer: A



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31. Construct a triangle ABC with $AB = 5.5$ cm,

$AC = 6$ cm and $\angle BAC = 105^\circ$. Hence

Construct the locus of points equidistant from

BA and BC .



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32. Draw a regular hexagon of side 5 cm.



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33. Draw a line $AB = 5$ cm. Mark a point C on AB such that $AC = 3$ cm. Using a ruler and a compass only, construct a circle of radius $2,5$ cm passing through A AND C .

construct two tangents to the circle from the external point B . Measure and record the length of the tangents.



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34. A line segment AB is length 8 cm . Draw a circle of radius 5 cm that passes through A and B .

Can you draw a circle of radius 3 cm passing through A and B ? Give reason in support of your answer.



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35. Using a ruler and a compass, construct a triangle ABC in which

$AB = 7\text{cm}$, $\angle CAB = 60^\circ$ and $AC=5\text{cm}$.

construct the locus of:

points equidistant from BA and BC. Hence

construct a circle touching the three sides of

the triangle internally.



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36. Using a ruler and a compass, construct a

triangle ABC in which

$AB = 7\text{cm}$, $\angle CAB = 60^\circ$ and $AC=5\text{cm}$.

construct the locus of:

points equidistant from BA and BC. Hence construct a circle touching the three sides of the triangle internally.



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37. Construct a triangle ABC in which $AB = 5$ cm, $BC = 6-8$ cm and median $AD = 4.4$ cm. Draw incircle of this triangle.



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38. Draw two concentric circles with radii 4 cm and 6 cm. Taking a point on the outer circle, construct a pair of tangents to inner circle. By measuring the lengths of both the tangents, show that they are equal to each other.



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39. In triangle ABC , $\angle ABC = 90^\circ$, side $AB = 6$ cm, side $BC = 7.2$ cm and BD is perpendicular to side AC . Draw circumcircle of triangle BDC and

then state the length of the radius of this circumcircle drawn.

A. 4.5 CM

B. 3.5 CM

C. 1.5 CM

D. 3.6 CM

Answer: D



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