



MATHS

BOOKS - CHETAN MATHS (TAMIL ENGLISH)

GEOMETRIC CONSTRUCTION

Practice Set 4 1

1. $\Delta ABC - \Delta LMN$. In
- $AB = 5.5$, $BC = 6\text{cm}$ and $CA = 4.5\text{cm}$. Construct
- ΔABC and ΔLMN , such that $\frac{BC}{MN} = \frac{5}{4}$.

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2. $\Delta RST - \Delta XYZ$. In
- ΔRST , $RS = 4.5\text{cm}$, $\angle RST = 40^\circ$, $ST = 5.7\text{cm}$. Construct

$\triangle RST$ and $\triangle XYZ$, such that $\frac{RS}{XY} = \frac{3}{5}$.



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3. $\triangle PQR \sim \triangle LTR$. In

$\triangle PQR$, $PQ = 4.2\text{cm}$, $QR = 5.4\text{cm}$, $PR = 4.8\text{cm}$. Construct

$\triangle PQR$ and $\triangle LTS$, such that $\frac{PQ}{LT} = \frac{3}{4}$.



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4. $\triangle LMT \sim \triangle AHE$ In

$\triangle LMT$, $LM = 6.3\text{cm}$, $\angle TLM = 50^\circ$, and $LT = 5.6\text{cm}$. $\frac{LM}{AH} = \frac{7}{5}$.

Construct $\triangle AHE$ and $\triangle LMT$.



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1. Construct a tangent to a circle with centre P and radius 3.2 cm at any point M on it.



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2. Draw a circle of radius 2.7 cm. Draw a tangent to the circle at any point it.



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3. Draw a circle of radius 3.3 cm. Draw a chord PQ of length 6.6cm. Draw tangents to the circle at points P and Q. Write your observation about the tangents.



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4. Draw a circle with radius 3.4 cm. Draw a chord MN of length 5.7 cm. in it. Construct tangent at point M and N to the circle.

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5. Draw a circle of radius 3.6 cm. Draw a tangent to the circle at any point on it without using the centre.

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6. Draw a circle P and radius 3.4cm. Take point Q at a distance 5.5 cm. From the centre. Construct tangents to the circle from point Q.

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7. Draw a circle with radius 4.1 cm. Construct tangents to the circle from a point at a distance 7.3 cm from the centre.



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Problem Set 4

1. $\Delta ABC \sim \Delta LMN$. In ΔABC , $AB = 5.1\text{cm}$, $\angle B = 40^\circ$, $BC = 4.8\text{cm}$, $\frac{AC}{LN} = \frac{4}{7}$. Construct ΔABC and ΔLMN .

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2. Construct ΔPRQ such that $PR = 6.3\text{cm}$, $RQ = 7.2\text{cm}$, $PQ = 5.8\text{cm}$. If $\frac{YZ}{RQ} = \frac{6}{5}$, then construct ΔXYZ similar to ΔPRQ .

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3. Draw a circle with centre P. Draw an arc AB of 100° measure. Draw tangents to the circle at points A and point B.



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4. Draw any circle. Take any point A on it and construct tangent at A without using the centre of the circle.



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5. Draw a circle with centre O and radius 3.5 cm. Take a point P at a distance 5.7 cm from the centre. Draw tangent of the circle from point P.



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6. Draw a circle of diameter 6.4 cm. Take a point R at a distance equal to its diameter from the center. Draw tangents from point R.



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7. Draw a circle of radius 3.4 cm and centre E. Take a point F on the circle. Take point A such that E-F-A and FA=4.1 cm. Draw tangents to the circle from point A.



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Mcqs

1. The number of tangents that can be drawn to a circle at a point on the circle is.....

- A. 3
- B. 2
- C. 1
- D. 0

Answer: C



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2. The maximum number of tangents that can be drawn to a circle from a point outside it is.....

A. 2

B. 1

C. one and only one

D. 0

Answer: A



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3. $\triangle ABC \sim \triangle PQR$, $\frac{AB}{PQ} = \frac{7}{5}$ then

A. $\triangle ABC$ is bigger

B. $\triangle PQR$ is bigger

C. both triangles will be equal

D. Can not be decided.

Answer: A



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4.Number of tangents can be drawn from a point inside the circle.

A. 0

B. 1

C. 2

D. Infinite

Answer: A



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5. The length of the two tangent segment drawn to a circle from an external point are.....

- A. Equal
- B. Unequal
- C. Infinite
- D. Can't say

Answer: A



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6. Tangents drawn at the endpoints of a diameter of a circle are.....

- A. Equal
- B. Perpendicular
- C. Parallel
- D. Intersecting each other

Answer: C



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7. In $\triangle ABC \sim \triangle PQR$, $AB:PQ = 2:3$ If $BC = 4$, then $QR = \dots\dots\dots$

A. 4

B. 6

C. 9

D. 8

Answer: B



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8. If $AB:BC = 3:5$, then into how many equal parts seg AC is divided to get point B?



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Problems For Practice

1. Draw a line segment $PQ = 8cm$. Take point R on it such that $l(PR) : l(RQ) = 3 : 2$.



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2. $l(AB) : l(BC) = 3 : 2$. Draw a seg AB, If $l(AB) = 7.2cm$.



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3. $\triangle XYZ \sim \triangle ABC$, $\angle X = 40^\circ$, $\angle Y = 80^\circ$, $XY = 6cm$. Draw $\triangle ABC$ if $AB : XY = 3 : 2$.



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4. Draw $\triangle ABC$ with side $BC = 6\text{cm}$, $AB = 5\text{cm}$, and $\angle ABC = 60^\circ$.

Also, construct $\triangle XYZ$ whose sides are $\frac{3}{4}$ of the corresponding sides of $\triangle ABC$.



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5.

$\triangle PQR \sim \triangle ABC$, $PQ = 3\text{cm}$, $QR = 4\text{cm}$, $PR = 5\text{cm}$. $A(\triangle PQR) : A(\triangle ABC) = 9 : 25$.

. Construct both triangles



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6. $\triangle PQR \sim \triangle GEF$, $m\angle P = 70^\circ$, $PQ = 5\text{cm}$, $PR = 3.5\text{cm}$. Construct

$\triangle GEF$, if $PQ : GE = 5 : 7$.



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7. $\Delta PQR \sim \Delta XAB$, $m\angle P = 60^\circ$, $PQ = 6\text{cm}$, $PR = 4\text{cm}$ Construct ΔXAB , if $PQ:XA = 3:2$.

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8. $\Delta AMT \sim \Delta GHE$, construct ΔAMT such that $MA = 6.3\text{cm}$, $\angle MAT = 120^\circ$, $AT = 4.9\text{cm}$ and $\frac{MA}{HG} = \frac{7}{5}$, then construct ΔGHE .

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9. Draw a tangent to a circle of radius 3 cm and centre O at any point K on the circle.

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10. Draw a circle with centre P and radius 2.6cm. Draw a chord AB of length 3.8cm. Draw tangent to the circle through points A and B.

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11. Draw a circle with radius 3.4 cm. Draw tangent to the circle, passing through point B on the circle, without using centre.

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12. Construct a circle with centre O and radius 4.3 cm. Draw a chord AB of length 5.6 cm. Construct the tangents to the circle at point A and B without using centre.

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13. Draw a circle with centre M and diameter 6 cm. Draw a tangent to the circle from a point N at distance of 9 cm from the centre.

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14. Draw a circle with O as centre and radius 3.8 cm. Take two points P and Q such that $\angle POQ = 120^\circ$ Draw tangents at P and Q without using centre.

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15. Draw a circle with O as centre and radius 4 cm. Take a point P at a distance of 7.5 cm from O Draw tangents to the circle through the point P.

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1. The number of tangents that can be drawn to a circle at a point on the circle is.....

A. 3

B. 2

C. 1

D. 0

Answer:



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2. The length of the two tangent segment drawn to a circle from an external point are.....

A. Equal

B. Unequal

C. Infinite

D. Can't say

Answer:

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3. Draw seg $PQ=8\text{cm}$. Divide it in the ratio 3:5,

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4. Draw $\angle ABC = 120^\circ$ and bisect it.

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5. Draw seg AB of length 6.3 cm and bisect it.

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6. Draw $\triangle DEF$, $EF = 5\text{cm}$. $\angle D = 40^\circ$, $\angle F = 50^\circ$.



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7. Construct a circle with centre O and radius 3.5cm. Take a point on it, draw a tangent passing through point P.



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8. $\triangle ABC \sim \triangle XYZ$, $AB:XY = 3:5$, $BC = 9\text{cm}$, $AC = 4.5\text{cm}$. Find YZ and XZ.



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9. Draw a circle with centre P and suitable radius. Draw a chord AB of length 5cm. Draw tangents at points A and B without using centres.



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10. Draw a circle centre O. Take two points P and Q on the circle with such that $\angle AOB = 120^\circ$. Draw tangents at points A and B.

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11.

$\triangle DEF \sim \triangle PQR$, $\angle D = 40^\circ$, $\angle F = 60^\circ$, $DF = 6\text{cm}$, $DE:PQ = 3:4$.

Construct only $\triangle PQR$.

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12. Draw a circle with centre A and radius 3.5cm. Take a point B such that $d(A,B)=8\text{cm}$. Draw tangents to the circle passing through point B.

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13.

$\Delta ABC \sim \Delta GEF$, $AB:GE = 5:2$. $AB = 6\text{cm}$, $BC = 7.5\text{cm}$, $AC = 5\text{cm}$.

Construct ΔGEF and ΔABC .



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