MATHS

BOOKS - NAVNEET PUBLICATION

GEOMETRICAL CONSTRUCTIONS

Question Bank

1. Draw the line segments of lengths given below and draw their perpendicular bisectors :

5.3 cm

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2. Draw the line segments of lengths given below and draw their perpendicular bisectors :

6.7 cm

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3. Draw the line segments of lengths given below and draw their perpendicular bisectors :

3.8 cm

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4. Draw the angle of given measures and draw their bisectors:

105°

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5. Draw the angle of given measures and draw their bisectors:

55°

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6. Draw the angle of given measures and draw their bisectors:

90°

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7. Draw an obtuse angled triangle and a right angled triangle. Find the point of concurrence of the angle bisectors of each triangle. Where does the point of concurrence lie?

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8. Draw an obtuse angled triangle and a right angled triangle. Find the point of concurrence of the angle bisectors of each triangle. Where does the point of concurrence lie?

A. Question matched

B.

C.

D.

Answer:

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9. Draw a right angled triangle. Draw the perpendicular bisectors of its sides. Where does the point of concurrency lie?

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10. Maithili, Shaila and Ajay live in three different places in a city. There is a toy shop equidistant from their houses.

Which geometrical construction should be used to represent this? Explain your answer.

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11. If angles of a triangle are in the ratio of $2:3:7$, then the sides are in the ratio of

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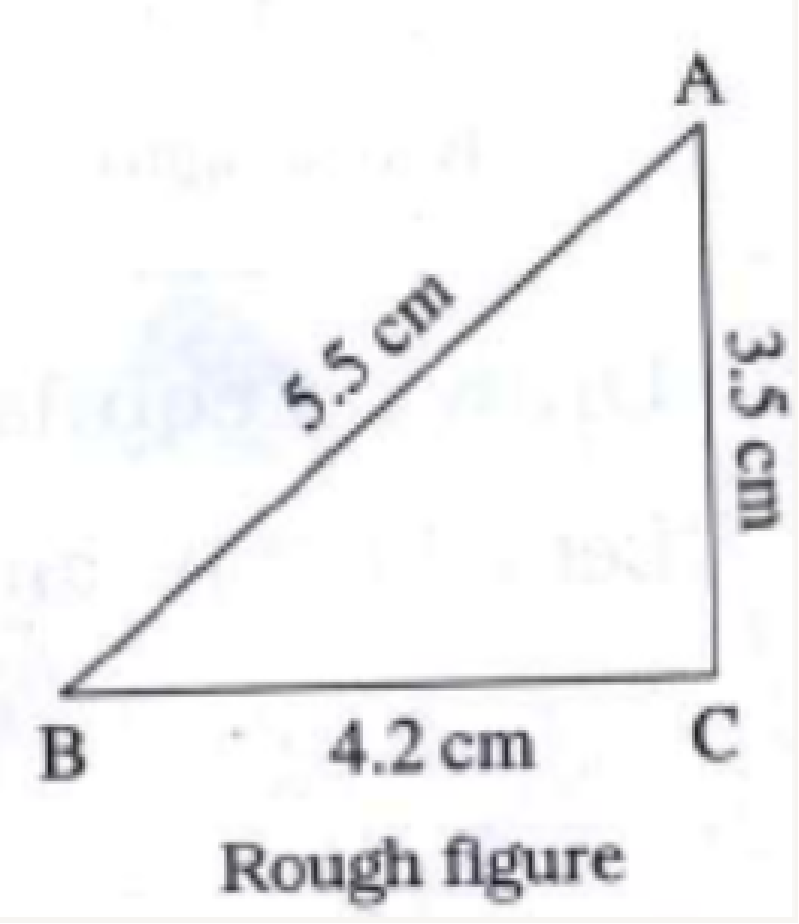
12. Draw the triangle with the measures given below:

In $\triangle ABC$, l(AB) = 5.5 cm, l(BC) = 4.2 cm, l(AC) = 3.5 cm.



Rough figure

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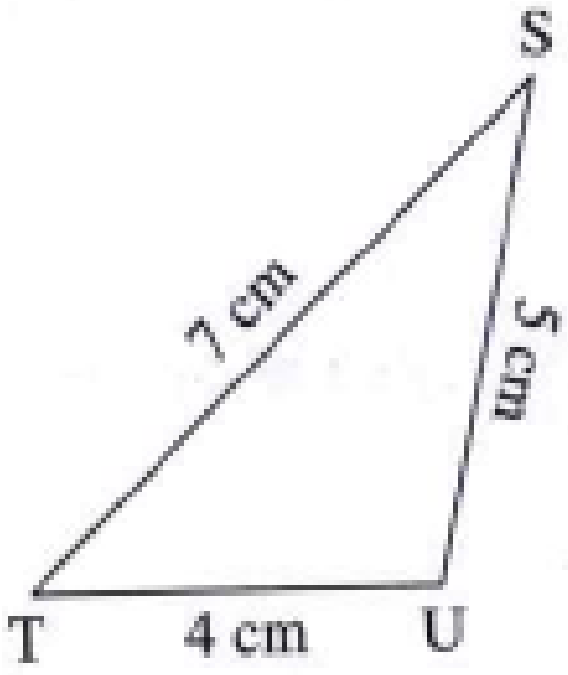
13. Draw the triangle with the measures given below:

In $\triangle ABC$, l(ST) = 7 cm, l(TU) = 4 cm, l(SU) = 5 cm.



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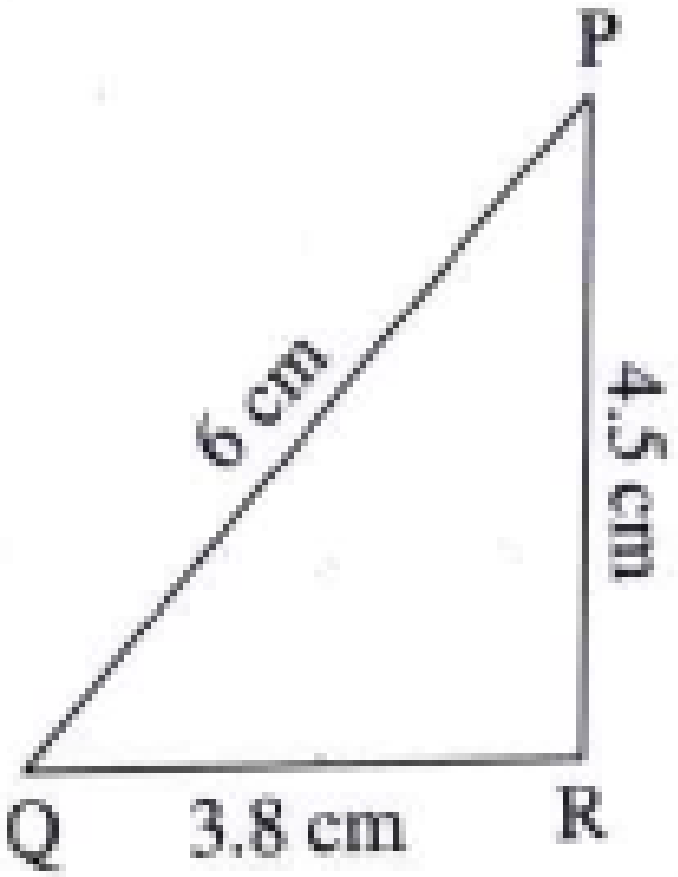
14. Draw the triangle with the measures given below:

In $\triangle PQR$, l(PQ) = 6 cm, l(QR) = 3.8 cm, l(PR) = 4.5 cm.



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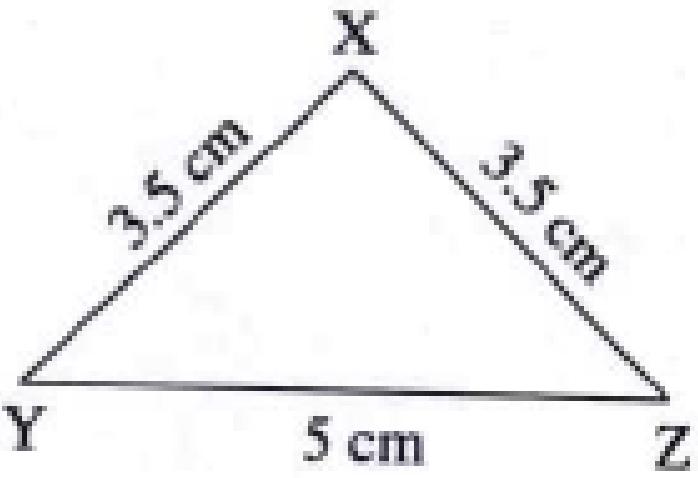
15. Draw an isosceles triangle with base 5 cm and the other sides 3.5 cm each.

Let $\triangle XYZ$ be an isosceles triangle in which the base YZ = 5 cm and l(XY) = l(XZ) = 3.5 cm.



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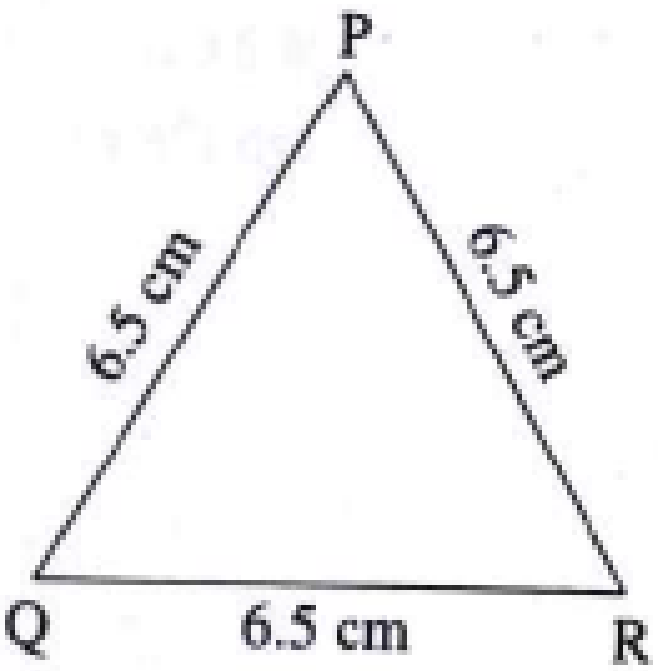
16. Draw an equilateral triangle with side 6.5 cm.

Let $\triangle PQR$ be an equilateral triangle with side 6.5 cm.



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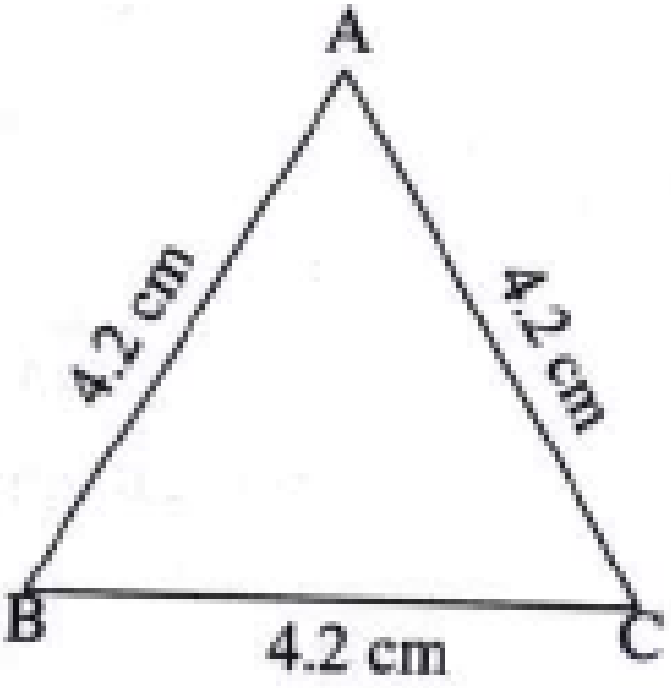
17. Choose the lengths of the sides yourself and draw one equilateral, one isosceles and one scalene triangle.

Equilateral triangle :

In $\triangle ABC$, l(AB) = l(BC) = l(AC) = 4.2 cm



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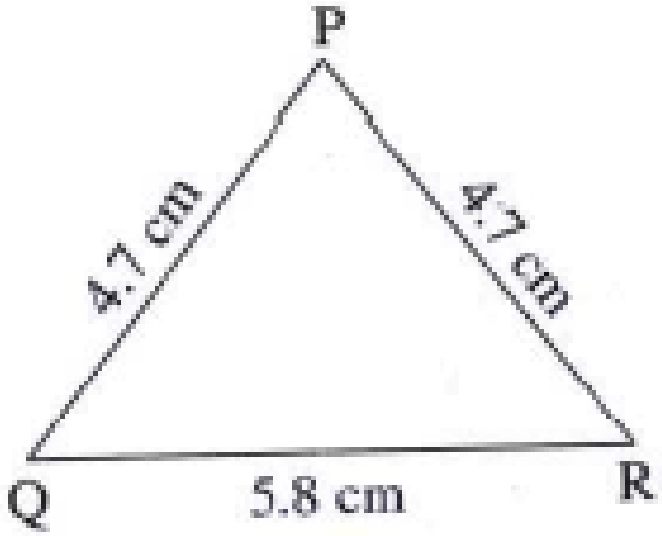
18. Choose the lengths of the sides yourself and draw one equilateral, one isosceles and one scalene triangle.

Isosceles triangle :

In $\triangle PQR$, l(QR) = 5.8 cm, l(PQ) = l(PR) = 4.7 cm



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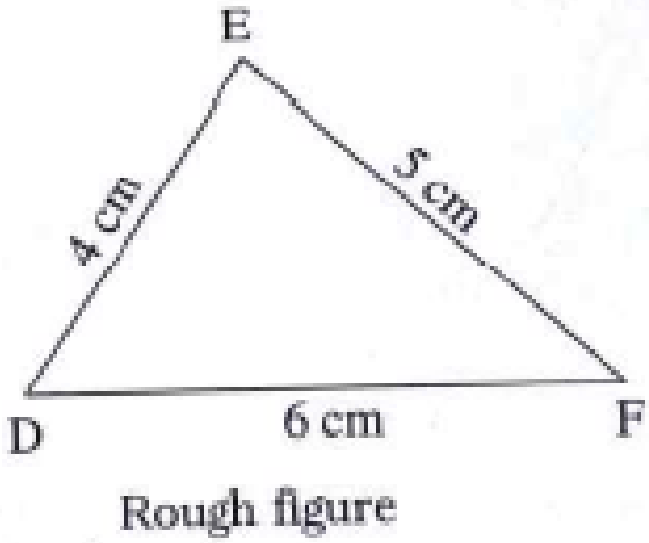
19. Choose the lengths of the sides yourself and draw one equilateral, one isosceles and one scalene triangle.

Scalene triangle :

In $\triangle DEF$, l(DE) = 4 cm, l(EF) = l(PR) = 5 cm, l(DF) = 6 cm



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20. To construct a triangle when two sides and the included angle is given.

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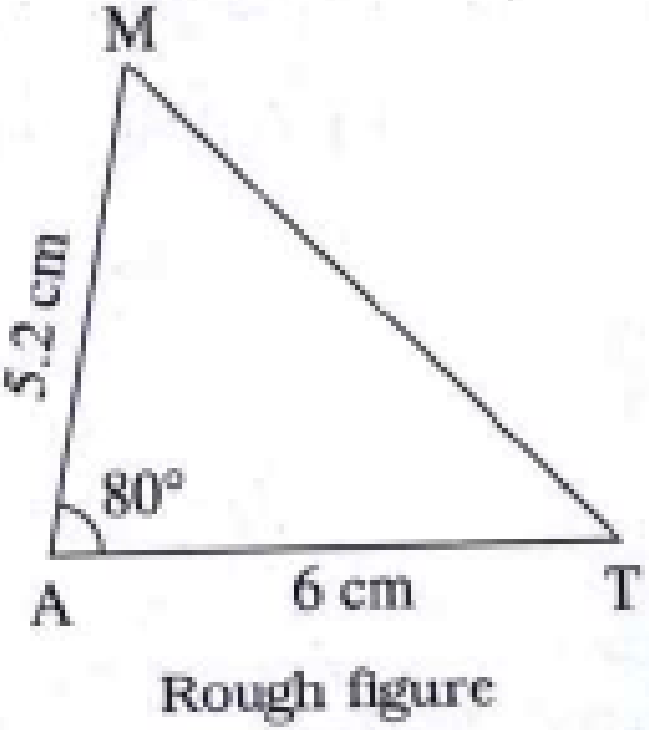
21. Draw the triangles with the measures given below:

In $\triangle MAT$, l(MA) = 5.2 cm, $m\angle A = 80^\circ$, l(AT) = 6 cm.



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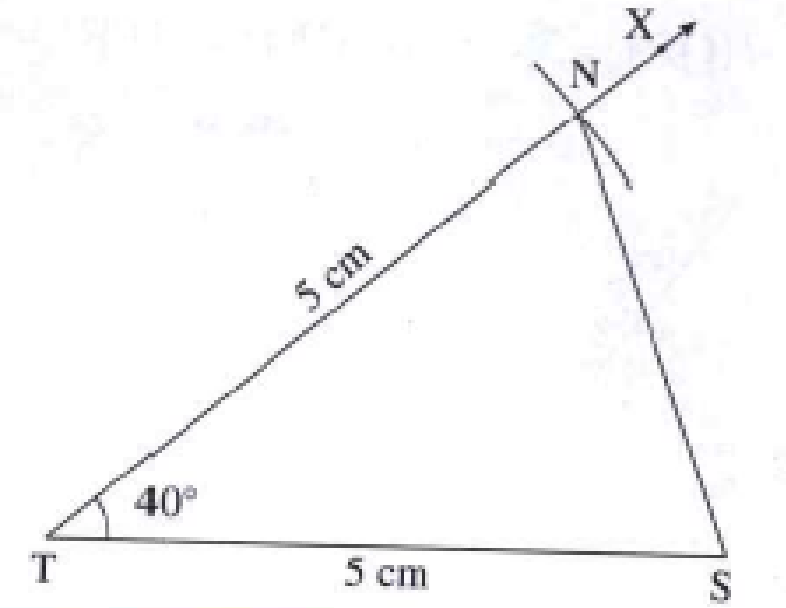
22. Draw the triangles with the measures given below:

In $\triangle NTS, m\angle T = 40^\circ$, l(NT) = l(TS) = 5 cm



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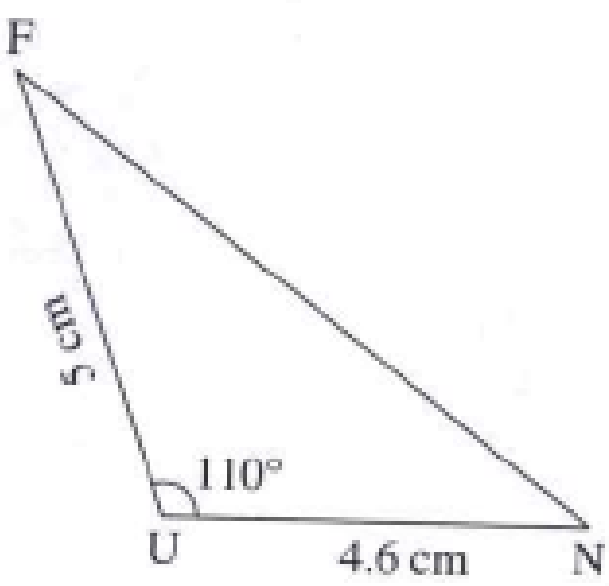
23. Draw the triangles with the measures given below:

In $\triangle FAN$, l(FU) = 5 cm, l(UN) = 4.6 cm, $m\angle U = 110^\circ$



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24. Match the pairs:

Column A	Column B
(1) Formation of rainbow	(a) Total internal reflection
(2) Twinkling of stars	(b) Dispersion
(3) Mirage	(c) Dispersion, refraction, reflection
(4) Spectrum	(d) Atmospheric refraction

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25. To construct a triangle when two angles and the included side is given.

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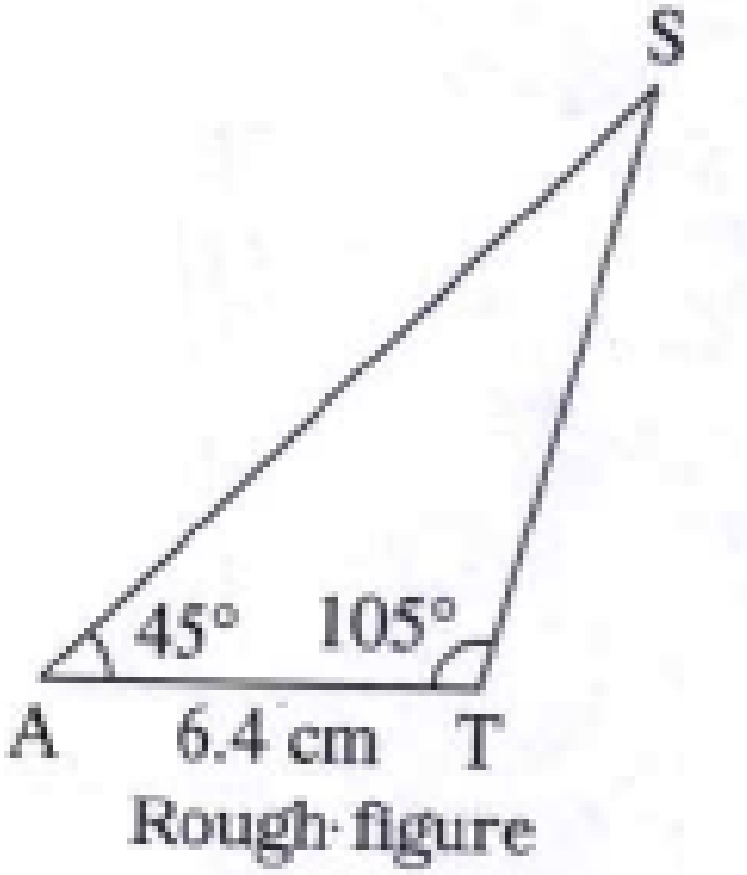
26. Construct the triangles according to the measures given below :

In $\triangle SAT$, l(AT) = 6.4 cm, $m\angle A = 45^\circ$, $m\angle T = 105^\circ$



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27. Construct the triangles of the measures given below

In $\triangle MNP, L(NP)5.2cm, m\angle N = 70^\circ, M\angle p = 40^\circ$

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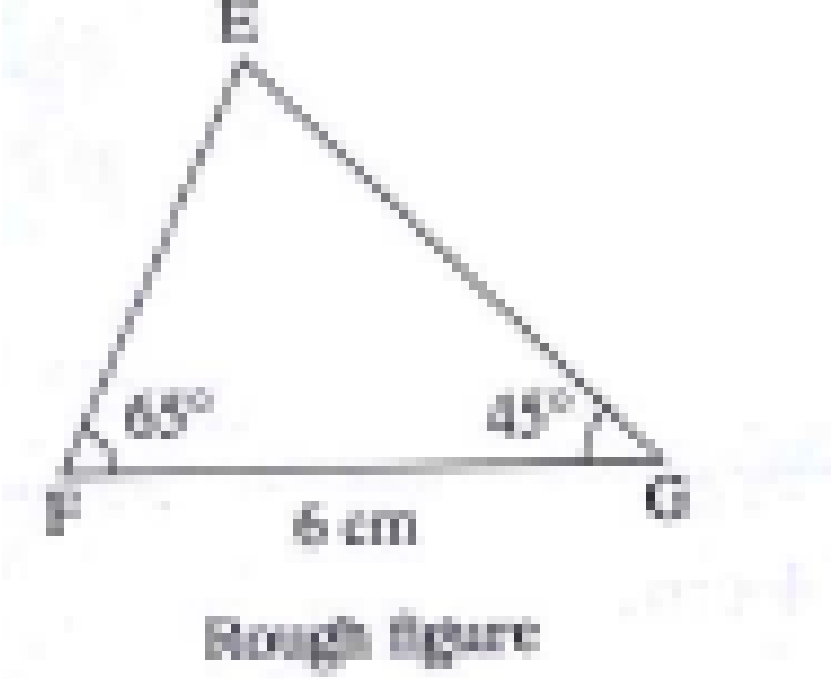
28. Construct the triangles of the measures given below :

In $\triangle EFG, l(FG) = 6cm, m\angle F = 65^\circ, m\angle G = 45^\circ$



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29. Construct the triangles of the measures given below :

In $\triangle XYZl(XY) = 7.3cmm\angle X = 34^\circ m\angle y = 95^\circ$

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30. To construct a right angled triangle given the hypotenus and one side.

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31. Construct the triangle according to the measures given below

In

$\triangle MAN, M\angle MAN = 90^\circ, l(AN) = 8cm, l(MN) = 10cm.$

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32. Construct the triangles of the measures given below :

In right angled $\triangle STU$, hypotenuse SU = 5 cm and l(ST) = 4 cm.

steps of construction,

In right angled triangle, hypotenuse is the side opposite the right angle.

Seg SU is the hypotenuse. < br> $\therefore m\angle T = 90^\circ$

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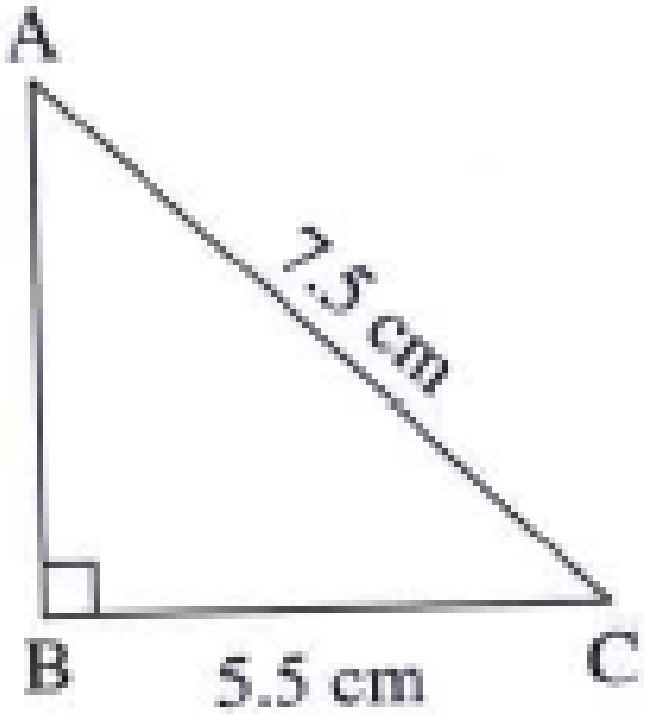
33. Construct the triangles according to the measures given below :

In right $\triangle ABC, l(AC) = 7.5cm, m\angle ABC = 90^\circ$, l(BC) =

5.5 cm.



Rough figure

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34. Construct the triangles of the measures given below :

In $\triangle PQR$, l(PQ) = 4.5 cm, l(PR) = 11.7 cm, $m\angle PQR$= 90^@`,

Rough figure

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35. Students should take examples of their own and practice construction of triangles.

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36. Write the names of parts of congruent line segments in the given figure.

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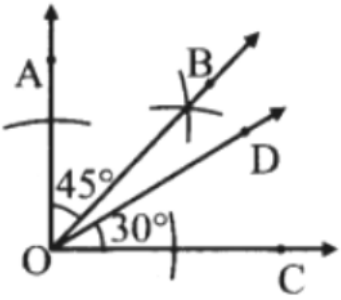
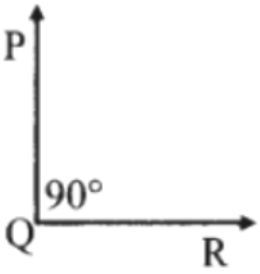
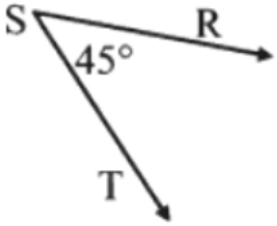
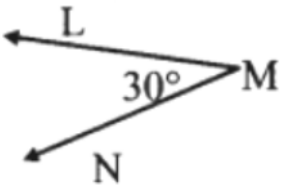
37. Some angles are given below. Using the symbol of congruence write the names of the pairs of congruent in

these figres:









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38. What is the point of concurrence of the bisectors of the angles of a triangle called?

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39. What is the point of concurrence of the perpendicular bisectors of the sides of a triangle called?

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40. In which type of triangle does the circumcentre of a triangle lie in the exterior of the triangle?

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41. Observe the figure of the clock and answer the following questions :

What time does the clock show?

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42. Observe the figure of the clock and answer the following questions :

What is the measure of the angle formed by the two hands of the clock?

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43. Observe the figure of the clock and answer the following questions :

At what time will the measure of the angle congruent to the above angle be?

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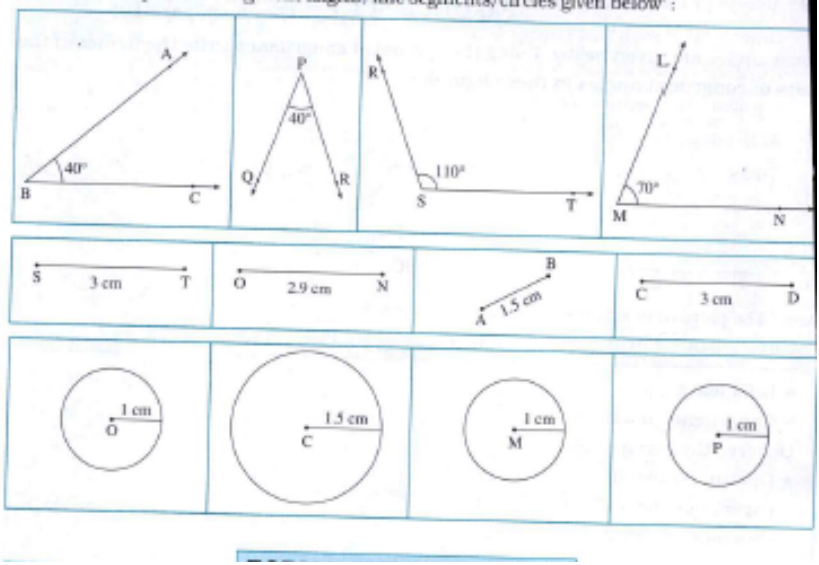
44. Name the pairs of congruent angles /line segments/circles given below.



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