

COMMON EXAMINATION FOR
ENTRANCE TO PUBLIC SCHOOLS.

GEOMETRY A.

[45 minutes.]

1. Three points, A, B, C on level ground are such that the bearing of B from A is 130° and the bearing of C from B is 40° . Calculate the size of the angle ABC and the bearing of B from C.
2. In fig. 1, the triangle PQR has $PQ=PR$ and PN is perpendicular to QR. Prove that the triangles PQN and PRN are congruent.

Write down any further relations between (i) the lengths, (ii) the angles in the figure that you can deduce from the congruence of the two triangles.

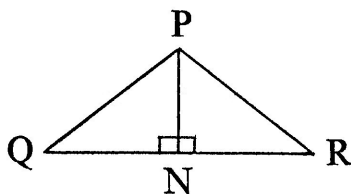


Fig. 1

3. Construct accurately a rhombus ABCD in which all the sides are 2.5 in. long and the angle ABC is 120° . Measure BD and AC as accurately as you can, in inches.

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4. In fig. 2, PQRS represents the boundary of a rectangular pitch, not drawn to scale. Make an accurate drawing of PQRS with $PQ=4$ in. and $PS=2.5$ in. The arc drawn in the figure represents the locus of a point whose distance from P is equal to PS.

Draw this arc and another arc to represent the locus of a point inside PQRS whose distance from Q is equal to QR.

Shade the area of your figure which represents the locus of a point inside PQRS that is both nearer to P than S and also nearer to Q than R.

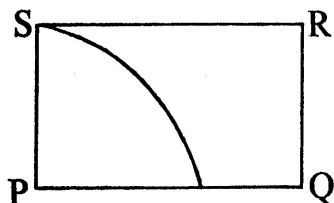


Fig. 2

5. In fig. 3, the line XY is parallel to the side BC of the triangle ABC. $AX=9$ cm., $XB=6$ cm., $AY=6$ cm., $BC=7.5$ cm. The figure is not drawn accurately to scale.

State, without giving reasons, which of the following statements are true and which are false:

- (i) angle $AYX = \text{angle } ACB$,
- (ii) $YC = 4.2$ cm.,
- (iii) the triangles AXY and ABC are congruent,
- (iv) the triangles AXY and ABC are similar,
- (v) $XY = 4.5$ cm.

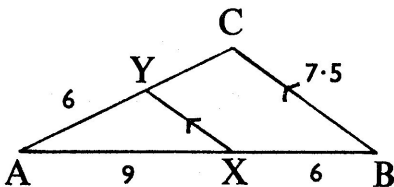


Fig. 3