

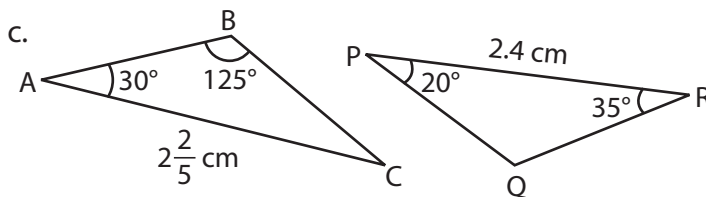
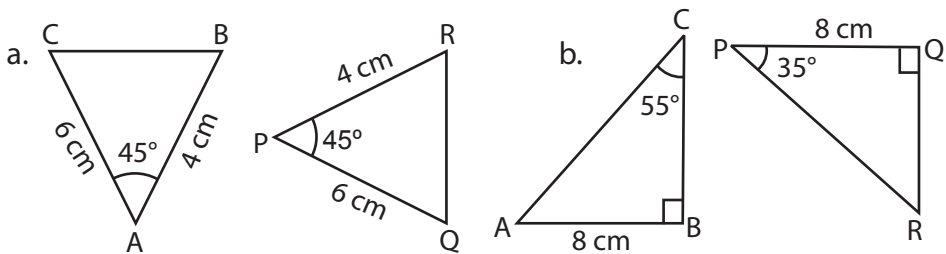
## Worksheet

- Choose the correct option.
  - In Geometry, when two triangles fit exactly on each other, we call them
    - equilateral triangles
    - scalene triangles
    - congruent triangles
    - isosceles triangles
  - If two triangles have two corresponding sides equal and the angle included between them is also equal, then the two triangles are congruent by the condition of \_\_\_\_\_ congruency.
    - SAS
    - SSS
    - ASA
    - RHS
  - If the hypotenuse and one side of a right-angled triangle are equal to the hypotenuse and one side of another right-angled triangle, then the two triangles are congruent by \_\_\_\_\_ congruency.
    - SSS
    - SAS
    - ASA
    - RHS

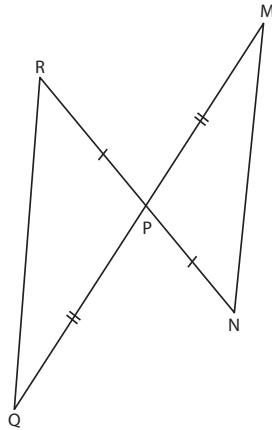
- Complete the following sentences.
  - Two triangles are congruent if they \_\_\_\_\_ each other.
  - If the sides of a triangle are equal to the corresponding sides of another triangle, then the two triangles are congruent by \_\_\_\_\_ rule of congruency.

- State true or false.
  - Two triangles are congruent if they are of same shape but not same size.
  - If two sides of a triangle are equal, then the angles opposite to those sides are also equal.
  - Two congruent figures are equal in area, but two figures equal in area need not be congruent.

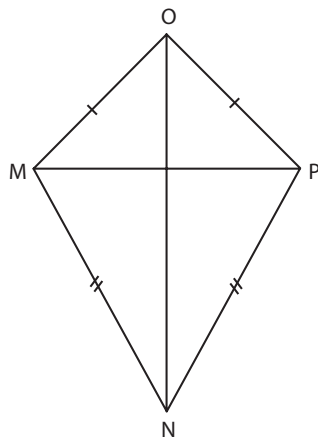
- Look at the figures and state whether the following pairs of triangles are congruent or not.



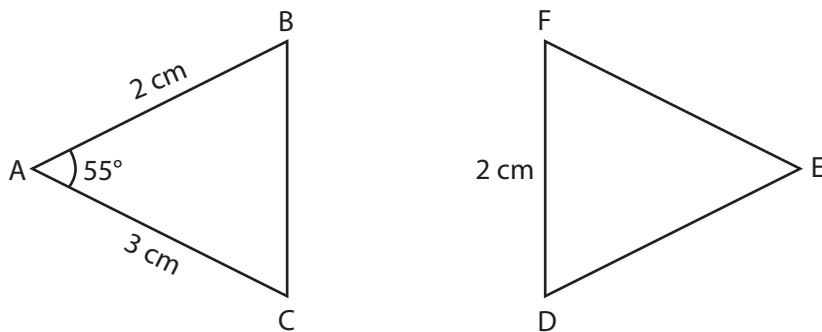
5. State which condition of congruency would be used to prove that  $\triangle PQR$  and  $\triangle PMN$  are congruent.



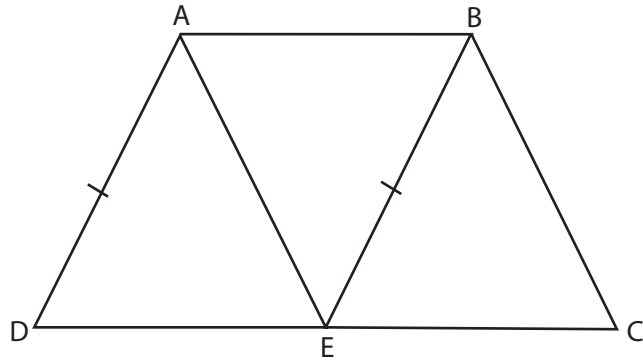
6. In the figure given below, identify the triangle which is congruent to  $\triangle MNO$ .



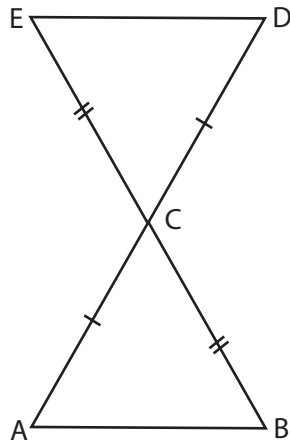
7. Given  $\triangle ABC \cong \triangle FDE$ . If  $AC = 3$  cm,  $\angle A = 55^\circ$ , find  $EF$  and  $\angle F$  if  $FD = 2$  cm and  $BC = FD$ .



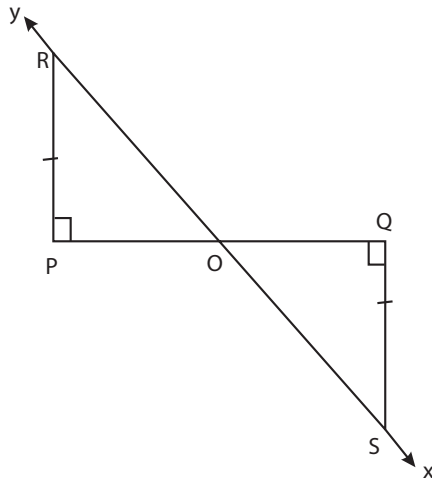
8. In the given figure, prove that  $\triangle ADE \cong \triangle BEC$  where  $AD = BE$ ,  $E$  is the mid-point of  $CD$  and  $ABCE$  is a parallelogram.



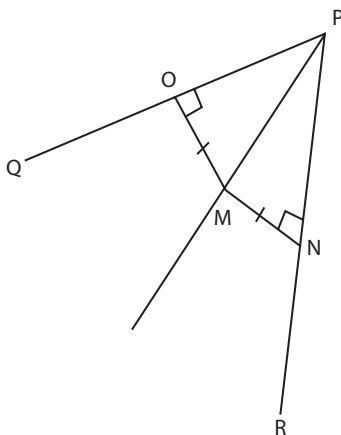
9. Prove that  $\triangle ABC \cong \triangle DEC$ .



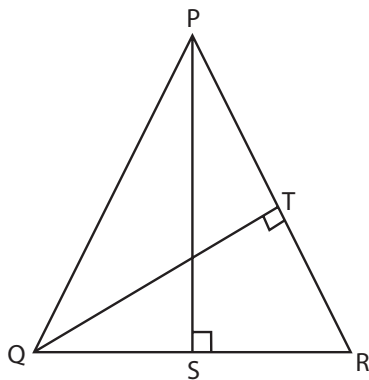
10. Prove that  $\triangle ORP$  and  $\triangle OSQ$  are congruent and hence prove that  $PQ$  and  $RS$  bisect each other at  $O$ .



11. Prove that PM bisects  $\angle QPR$ .



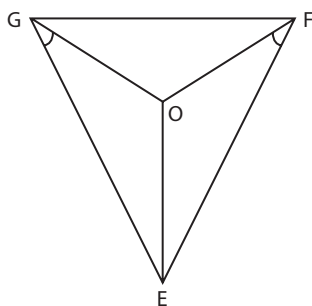
12. PQR is an equilateral triangle and PS and QT are perpendiculars to QR and PR, respectively. Prove that



a.  $PS = QT$

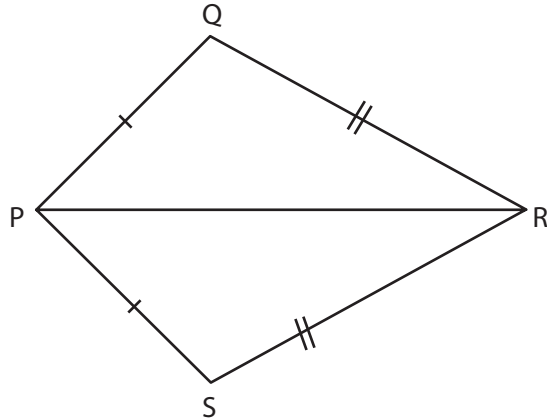
b.  $QS = RT$

13. In the adjoining figure, OE bisects  $\angle E$  and  $\angle EFO = \angle EGO$ . Prove that  $OG = OF$

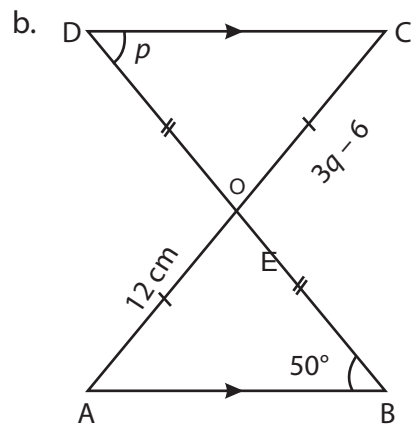
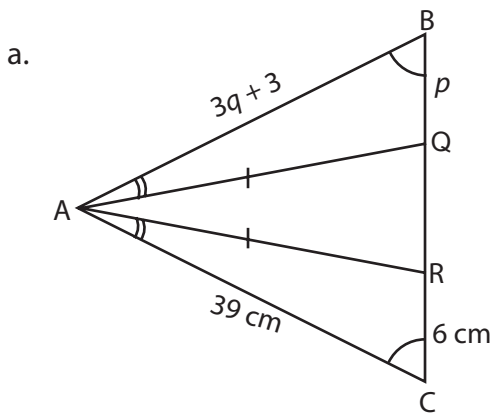


14. NY is the bisector of  $\angle MNO$  and P is any point on NY. Prove that perpendiculars drawn from P to MN and NO are equal.

15. In the given figure,  $PQ = PS$  and  $QR = SR$ .
- State three pairs of equal parts in  $\triangle PQR$  and  $\triangle PSR$ .
  - Is  $\triangle PQR \cong \triangle PSR$ ?
  - Does  $PR$  bisect  $\angle QPS$ ? Give reasons.



16. In each of the following figures, find the values of  $p$  and  $q$ .



## Answers to Worksheet

- |  |         |         |
|--|---------|---------|
| 1. a. iii                                | b. i    | c. iv   |
| 2. a. superimpose                        | b. SSS  |         |
| 3. a. False                              | b. True | c. True |
| 4. a. Yes                                | b. Yes  | c. No   |
| 5. SAS                                   |         |         |
| 6. $\triangle PNO$                       |         |         |
| 7. $\angle F = 55^\circ$ , $EF = 3$ cm   |         |         |
| 15. a. $PQ = PS$ ; $QR = SR$ ; $PR = PR$ | b. Yes  | c. Yes  |
| 16. a. $p = 6$ cm; $q = 12$ cm           |         |         |
| b. $p = 50^\circ$ ; $q = 6$ cm           |         |         |