



TEST PAPER: MATHEMATICS

Time: 50 Minutes

Class: 9th I.C.S.E.

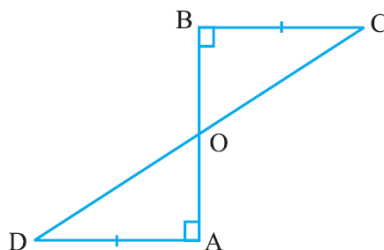
Max. Marks: 30 Marks

Date: 20th June, 2018

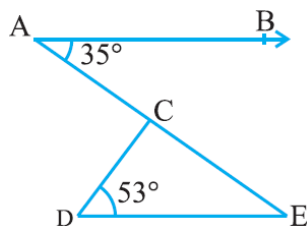
Marking Scheme: Four questions carry 10 marks each. Questions have 3 subparts each. Subparts (a) and (b) carry 3 marks each and subpart (c) carries 4 marks.

Question 1:

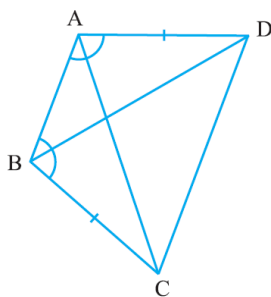
- a. AD and BC are equal perpendiculars to a line segment AB. Show that CD bisects AB.



- b. In figure below, $AB \parallel DE$, $\angle BAC = 35^\circ$ and $\angle CDE = 53^\circ$, find $\angle DCE$.

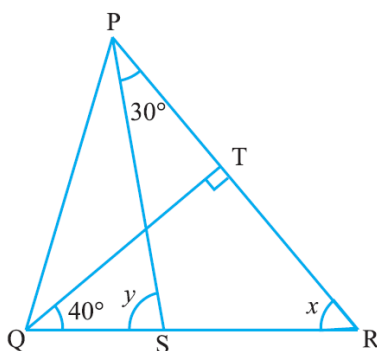


- c. ABCD is a quadrilateral in which $AD = BC$ and $\angle DAB = \angle CBA$. Prove that
(i) $\triangle ABD \cong \triangle BAC$
(ii) $BD = AC$
(iii) $\angle ABD = \angle BAC$.

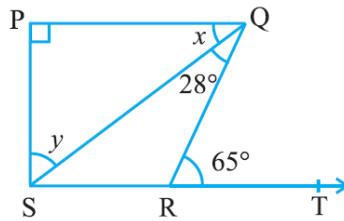


Question 2:

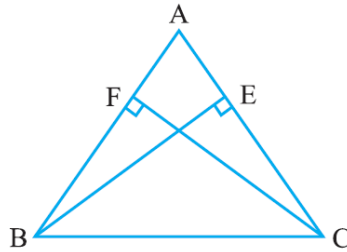
- a. In figure below, if $QT \perp PR$, $\angle TQR = 40^\circ$ and $\angle SPR = 30^\circ$, find x and y .



- b. if $PQ \perp PS$, $PQ \parallel SR$, $\angle SQR = 28^\circ$ and $\angle QRT = 65^\circ$, then find the values of x and y .

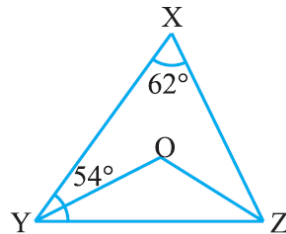


- c. ABC is a triangle in which altitudes BE and CF to sides AC and AB are equal. Show that
 (i) $\triangle ABE \cong \triangle ACF$
 (ii) $AB = AC$, i.e., ABC is an isosceles triangle



Question 3:

- a. $\angle X = 62^\circ$, $\angle XYZ = 54^\circ$. If YO and ZO are the bisectors of $\angle XYZ$ and $\angle XZY$ respectively of $\triangle XYZ$, find $\angle OZY$ and $\angle YOZ$.



- b. If $x + \frac{1}{x} = 3$, find the value of $x^4 + \frac{1}{x^4}$

- c. Line l is the bisector of an angle $\angle A$ and B is any point on l . BP and BQ are perpendiculars from B to the arms of $\angle A$.

Show that:

- (i) $\triangle APB \cong \triangle AQB$
 (ii) $BP = BQ$

