



# INDIAN SCHOOL DARSAIT

## DEPARTMENT OF MATHEMATICS



Subject : Mathematics      Topic : Triangles      Date of Worksheet : 24-8-2017

Worksheet No:8

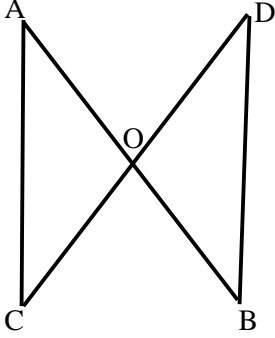
Resource Person: Mrs. Anu Likson

Date : \_\_\_\_\_

Name of the Student : \_\_\_\_\_

Class & Division : IX .....

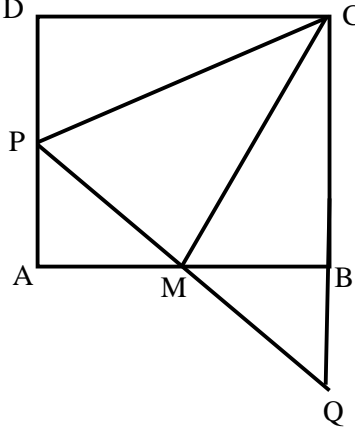
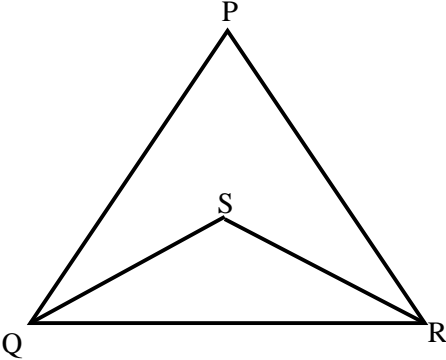
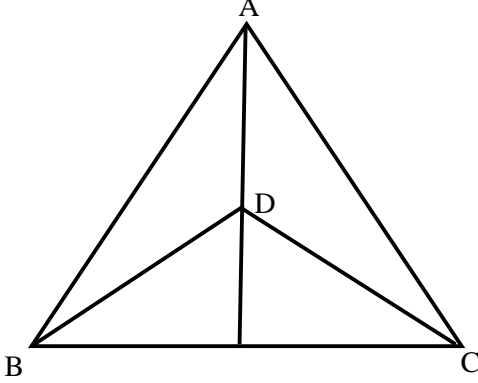
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<b>Section A (Basic Skill)</b>		<b>Marks</b>
<u>Evaluate</u>		
1.	$(1.07 + 1.23)$	1
2.	$25.007 + 20.1 - 14.07$	1
3.	$40 + 12.45 + 10.007$	1
4.	$13.7 \times 42.2$	1
5.	$(35.5 + 12) \times (12.5 + 0.005)$	1
<b><u>Section B</u></b> Answer the following questions:		
1.	Prove that the sum of the four angles of a quadrilateral ABCD is $360^\circ$ , using properties of triangles.	2
2.	In the given figure , O is the midpoint of AB and CD, prove that $AC = BD$ . 	2



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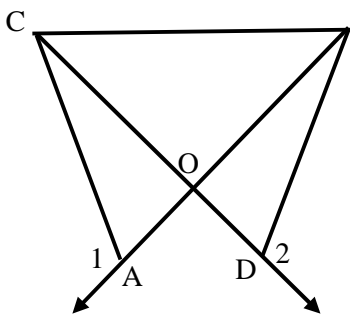
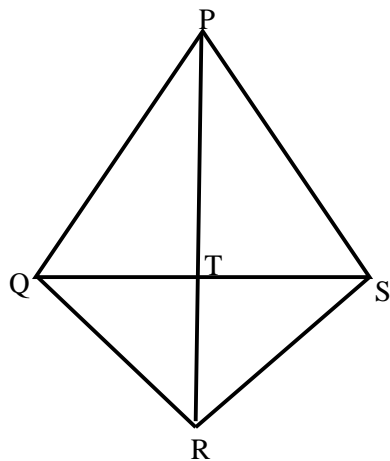
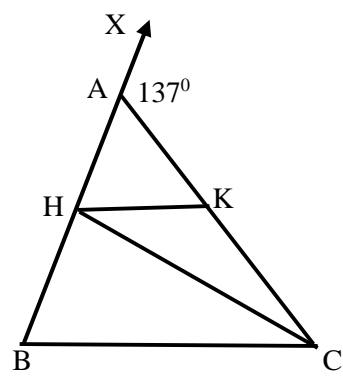


3.	<p>In the given figure , ABCD is a square and M is the midpoint of AB. PQ is perpendicular to CM meets AD at P and CB produced at Q. Prove that <math>PA = BQ</math>.</p> 	3
4.	<p>In <math>\Delta PQR</math> , if S is any point on the side QR, Show that, <math>PQ + QR + RP &gt; 2 PS</math>.</p>	3
5.	<p>In the given figure, PQR is a triangle and S is any point in its interior. Show that <math>SQ + SR &lt; PQ + PR</math>.</p> 	3
6.	<p>In the given figure, <math>AB = AC</math>, D is the point in the interior of <math>\Delta ABC</math> such that <math>\angle DBC = \angle DCB</math>. Prove that AD bisects <math>\angle BAC</math> of <math>\Delta ABC</math>.</p> 	3
7.	<p>In the given figure, <math>OA = OD</math> and <math>\angle 1 = \angle 2</math>. Prove that <math>\Delta OCB</math> is an isosceles triangle.</p>	4



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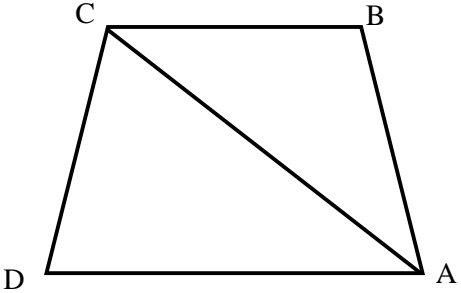
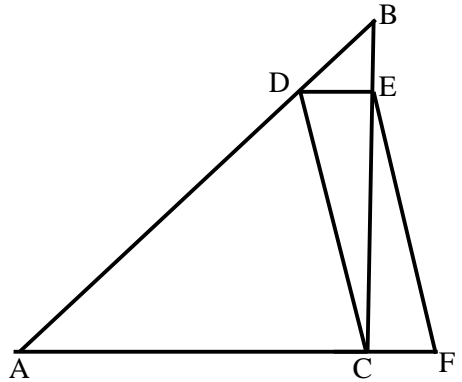
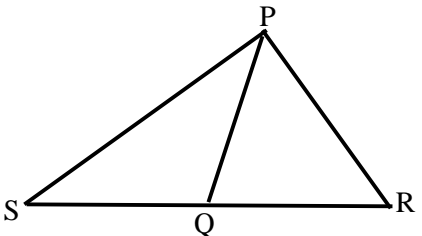


		
8.	<p>In the figure, if <math>PQ = PS</math>, <math>RQ = RS</math>, then show that <math>\Delta PQR \cong \Delta PSR</math> and <math>\Delta RQT \cong \Delta RST</math>.</p> 	4
9.	<p><math>PQR</math> is a triangle in which <math>PQ = PR</math>. <math>S</math> is any point on the side <math>PQ</math>. Through <math>S</math>, a line is drawn parallel to <math>QR</math> intersecting <math>PR</math> at <math>T</math>. Prove that <math>PS = PT</math>.</p>	4
10.	<p>In the given figure, <math>AB = AC</math>, <math>CH = CB</math> and <math>HK \parallel BC</math>. If <math>\angle CAX = 137^\circ</math>, then find <math>\angle CHK</math>.</p> 	4



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<u>Section C</u>		
1.	<p>In the figure, prove that <math>CD + DA + AB + BC &gt; 2 AC</math>.</p> 	3
2.	<p>In figure, <math>\angle ACB</math> is a right angle and <math>AC = CD</math> and CDEF is a parallelogram. If <math>\angle FEC = 10^\circ</math>, then calculate <math>\angle BDE</math>.</p> 	3
3.	<p>In figure, <math>PQ = PR</math>. Show that <math>PS &gt; PQ</math>.</p> 	4
4.	<p>In <math>\Delta ABC</math>, if <math>AB</math> is the greatest side, then prove that <math>\angle C = 60^\circ</math>.</p>	4
5.	<p>Show that the difference of any two sides of a triangle is less than the third side.</p>	4