

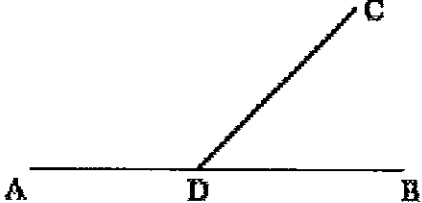
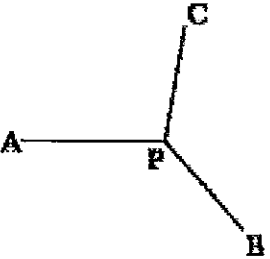
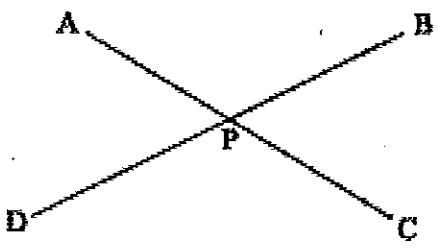
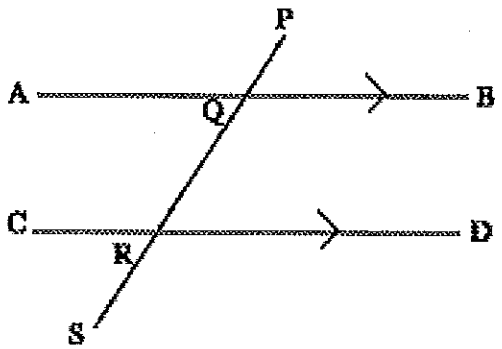
SHEET 1. DEDUCTIVE GEOMETRY

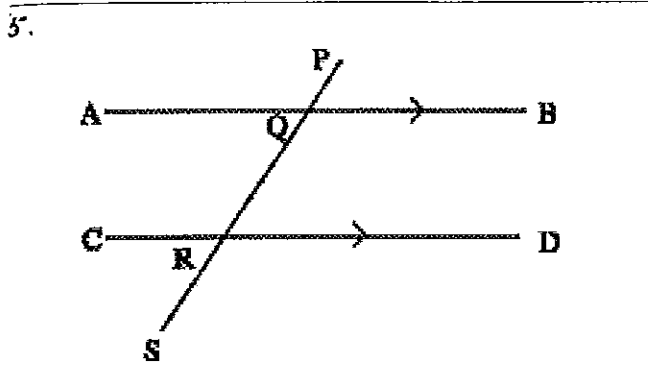
The Basic Facts

Keep this sheet for future reference as it will be a summary of all the geometry reasons in the next section of work.

Complete the following by giving the reasons for each statement.

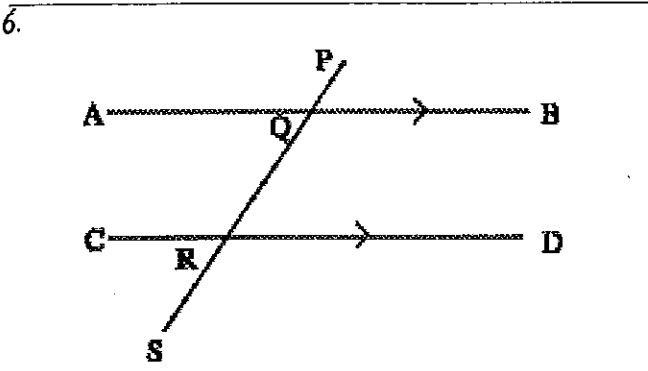
In each example mark the angles mentioned on the diagram. If the angles are equal, use the same mark. If the angles are different, use a different mark for each of the angles.

<p>1.</p> 	<p>$\angle ADC + \angle BDC = 180^\circ$</p> <p>(.....)</p>
<p>2.</p> 	<p>$\angle APB + \angle BPC + \angle CPA = 360^\circ$</p> <p>(.....)</p>
<p>3.</p> 	<p>$\angle APD = \angle BPC$</p> <p>(.....)</p>
<p>4.</p> 	<p>$\angle BQR = \angle DRS$</p> <p>(.....)</p> <p>Key word</p> <p>_____</p>



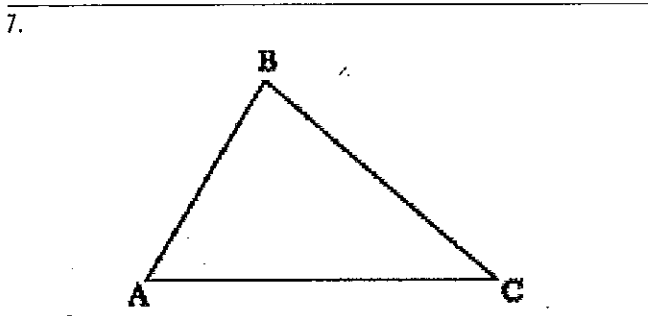
$\angle AQR = \angle QRD$
 (.....)

Key word

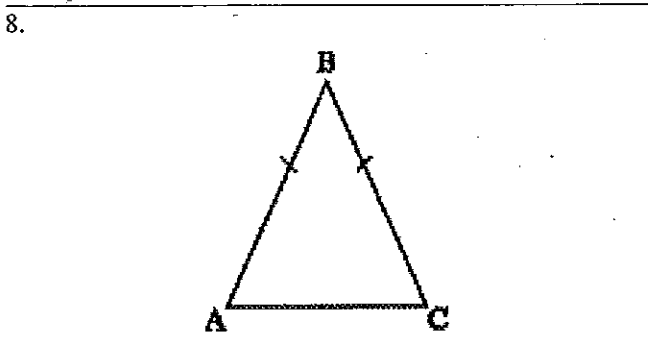


$\angle BQR + \angle QRD = 180^\circ$
 (.....)

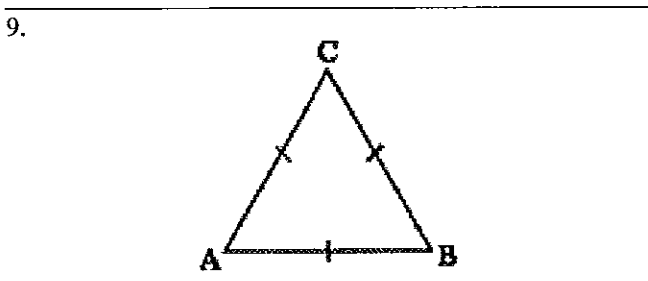
Key word



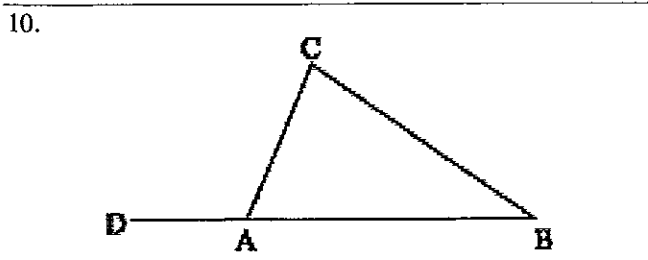
$\angle A + \angle B + \angle C = 180^\circ$
 (.....)



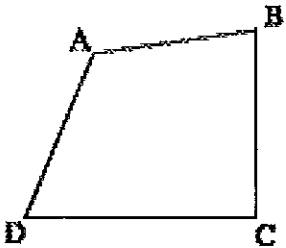
$\angle A = \angle C$
 (.....)
 (.....)



$\angle A = \angle B = \angle C = 60^\circ$
 (.....)



$\angle DAC = \angle C + \angle B$
 (.....)
 (.....)

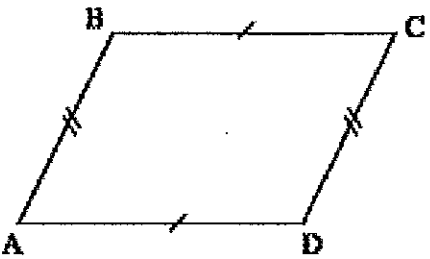
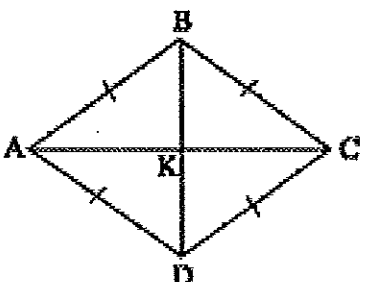
<p>11.</p> 	$\angle A + \angle B + \angle C + \angle D = 360^\circ$ <p>(.....)</p>
--	--

12. Quadrilaterals

In addition to the reasons on the previous pages you can use the properties of special quadrilaterals to give reasons for

- (a) lines being equal in length;
- (b) lines being parallel;
- (c) angles being equal.

Just two examples are given below but there can be many more reasons associated with the special quadrilaterals. More on this will be covered when we study the tests for quadrilaterals later.

<p>(a)</p> 	<p>ABCD is a parallelogram (since it has both pairs of opposite sides equal). Complete the reason for:</p> <p>(i) $AB \parallel DC$</p> <p>(.....)</p> <p>(ii) $\angle B = \angle D$</p> <p>(.....)</p>
<p>(b)</p> 	<p>ABCD is a rhombus. Complete the reason for:</p> <p>(i) $\angle BAK = \angle KAD$</p> <p>(.....)</p> <p>(ii) $\angle BKA = 90^\circ$</p> <p>(.....)</p> <p>(iii) $BK = KD$</p> <p>(.....)</p>