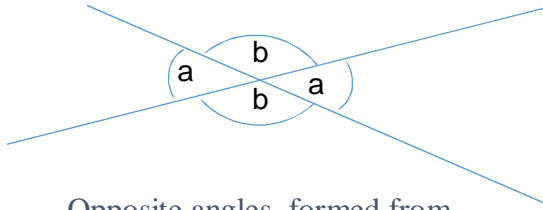
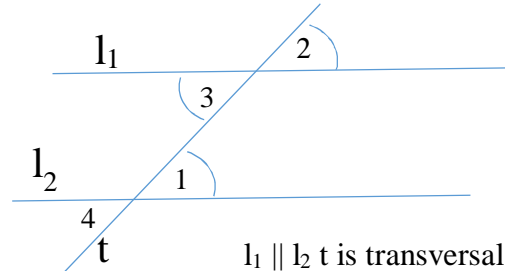


Geometry: Angles



Opposite angles, formed from crossing straight lines, are equal.



$l_1 \parallel l_2$ t is transversal:
 $\angle 1 = \angle 2 = \angle 3$

$\angle a = \angle a$ – opposite

$\angle a + \angle b = 180^\circ$ – on a straight line,

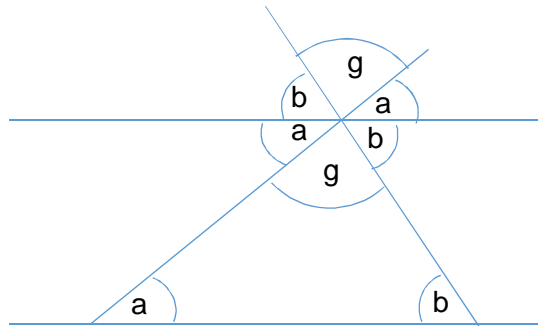
Or complementary angles

$\angle 1 = \angle 3$ = alternate internal angles

$\angle 1 = \angle 2$ = corresponding angles

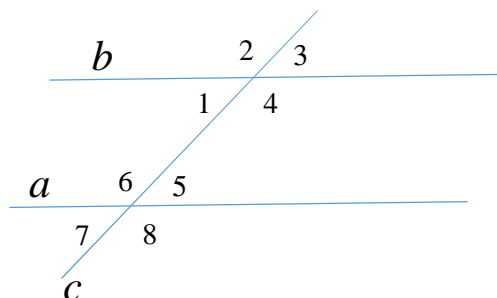
$\angle 4 = \angle 2$ = alternate exterior angles

From both these pieces of information we can show that the sum of angles in a triangle is always 180° .



Homework

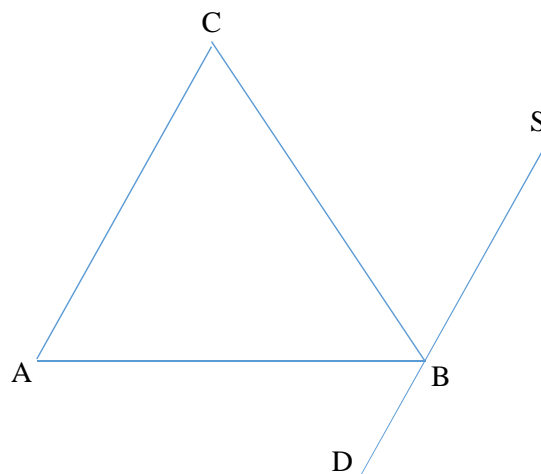
- On the picture, a and b , which are parallel to each other, are intersected by line c . What are the relationships:
 - $\sphericalangle 3$ and $\sphericalangle 5$
 - $\sphericalangle 2$ and $\sphericalangle 8$
 - Prove that $\sphericalangle 4 + \sphericalangle 5 = 180^\circ$.



- In the same picture,
 - if $\sphericalangle 7 = 65^\circ$, find: $\sphericalangle 1$, $\sphericalangle 3$, $\sphericalangle 1 + \sphericalangle 6$
 - If you know that $\sphericalangle 7 = \sphericalangle 1$, prove that*: $\sphericalangle 1 = \sphericalangle 3$ and $\sphericalangle 5 = \sphericalangle 1$

(* or say why the angles will be equal)

- Intersecting at point B on triangle ABC is drawn line DS, such that DS is parallel to AC. Prove that (or say why the angles will be equal):
 - $\sphericalangle ACB = \sphericalangle SBC$
 - $\sphericalangle CAB = \sphericalangle DBA$
 - $\sphericalangle CAB = \sphericalangle SBK$
 - If $\sphericalangle CAB = 40^\circ$ and $\sphericalangle BCA = 60^\circ$, find angles $\sphericalangle ABD$ and $\sphericalangle SBC$



- In triangle ABC, $\sphericalangle A = 35^\circ$, $\sphericalangle B = 55^\circ$, prove that this triangle is right-angled.
- What type of triangle has one angle equal to the sum of the other two?
- Find each of the outside angles of a right-triangle, if one of its angles is 58° .