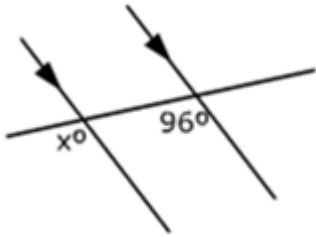
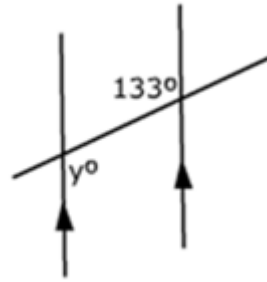


Year 9 Higher – Angles; parallel lines and polygons

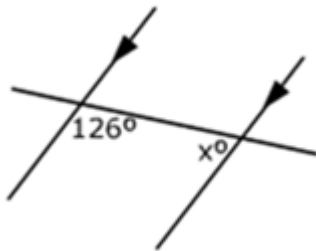
1. Find the missing angle – give a reason for your answer.



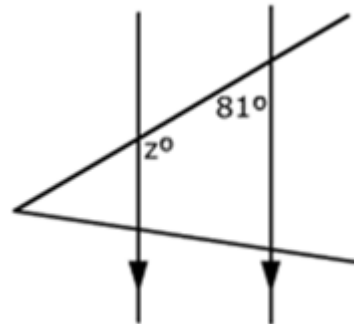
2. Find the missing angle – give a reason for your answer.



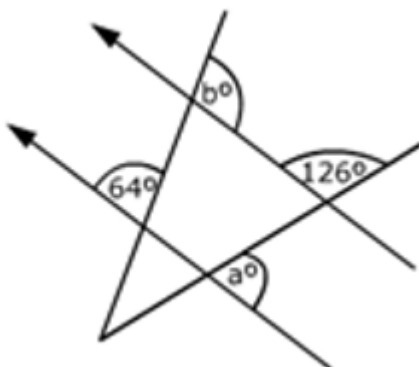
3. Find the missing angle – give a reason for your answer.



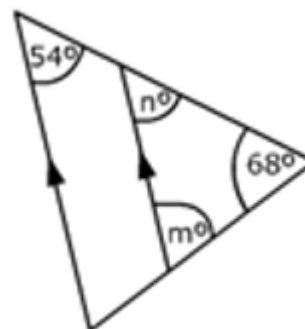
4. Find the missing angle – give a reason for your answer.



5. Find the missing angles – give reasons for your answer.



6. Find the missing angles – give reasons for your answer.



7 Complete the table

Name of regular polygon	Number of Sides	Size of exterior angle	Sum of all interior angles	Size of interior angle
Equilateral triangle	3	$360^\circ \div 3 = \underline{\quad}$	$1 \times 180^\circ = \underline{\quad}$	$\underline{\quad} \div 3 = \underline{\quad}$
Square	4	$360^\circ \div 4 = \underline{\quad}$	$2 \times 180^\circ = \underline{\quad}$	$\underline{\quad} \div 4 = \underline{\quad}$
Pentagon	5			
Hexagon				
Heptagon				
Octagon				
Nonagon				
Decagon				
<i>n</i> -sided polygon	<i>n</i>	$360^\circ \div \underline{\quad}$	$\underline{\quad} \times 180^\circ$	$\underline{\quad} \div \underline{\quad}$

8. What is each interior angle of a regular polygon with 14 sides?

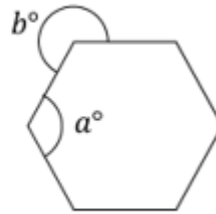
9. Calculate the sum of the interior angles of a polygon with 22 sides.

9. Each interior angle of a regular polygon is 168° . How many sides does the polygon have?

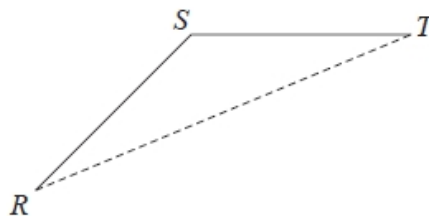
10. How many sides do these regular polygons have if their exterior angles are...?
a) 30° b) 18°

11

The diagram shows a regular hexagon.
What are the sizes of angles a and b ?



12



RS and ST are 2 sides of a regular 12-sided polygon.
 RT is a diagonal of the polygon.

Work out the size of angle STR .
You must show your working.

