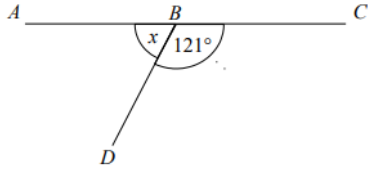


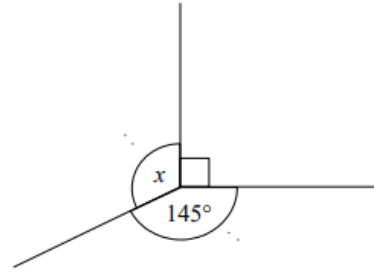
Year 9 Core – Angles: parallel lines and polygons

ABC is a straight line. Work out the size of the angle marked x .

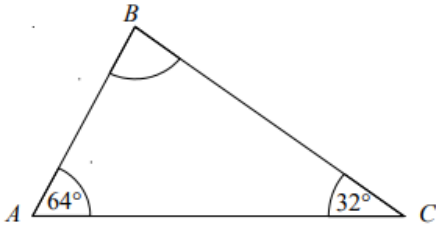


2

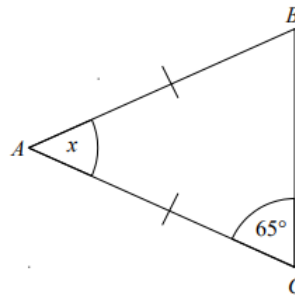
Work out the size of the angle marked x .



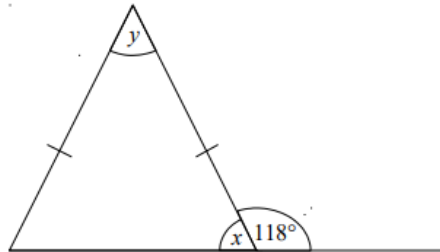
3. Work out the size of angle ABC



4. ABC is an isosceles triangle, work out the size of angle x .



5



(a) Work out the size of the angle marked x .

.....°

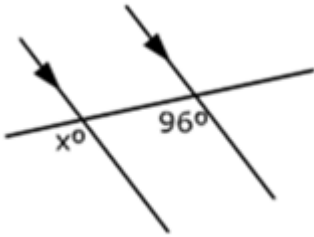
(b) Work out the size of the angle marked y .

.....°

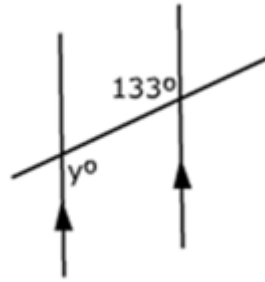
(c) Give reasons for your answer.

Year 9 Core – Angles; parallel lines and polygons

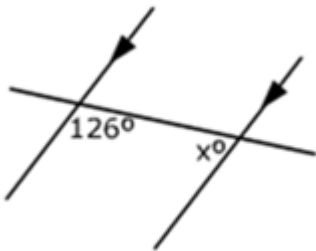
1. Find the missing angle – give a reason for your answer.



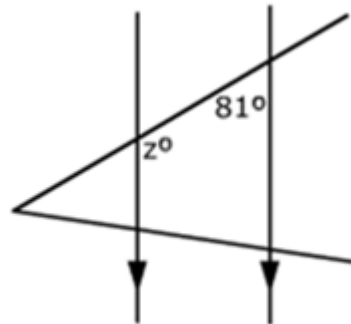
2. Find the missing angle – give a reason for your answer.



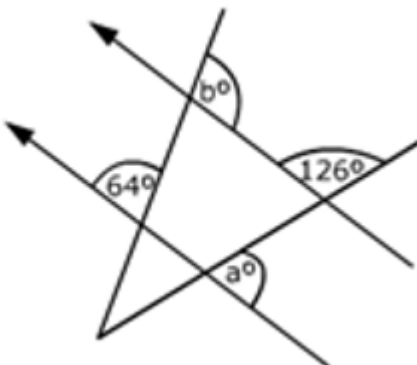
3. Find the missing angle – give a reason for your answer.



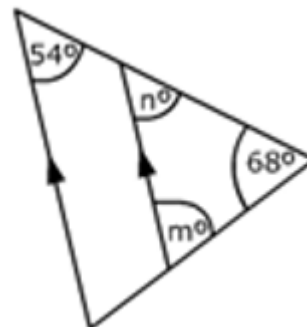
4. Find the missing angle – give a reason for your answer.



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 | | | | |
| n -sided polygon | n | $360^\circ \div \underline{\quad}$ | $\underline{\quad} \times 180^\circ$ | $\underline{\quad} \div \underline{\quad}$ |

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°

