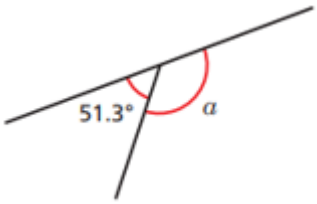
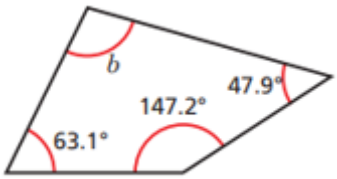
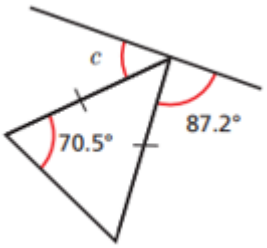
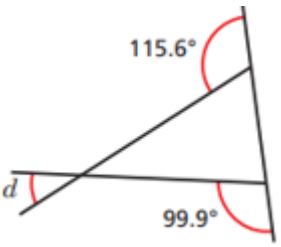
Year 8 Core – Angles in Parallel Lines and Polygons Questions

1 Work out the size of the unknown angles.





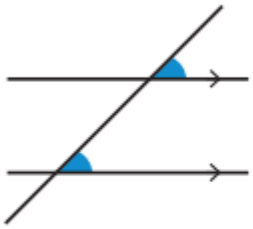




a = _____ b=_____ c=_____ d=_____

2 Are the pairs of angles alternate, corresponding or neither?

a)



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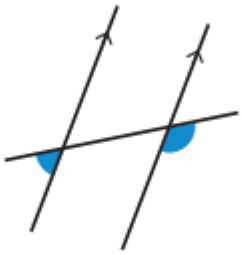
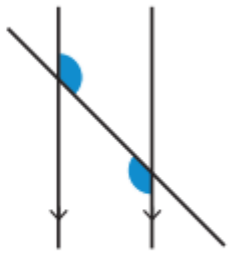
b)



_____

c)



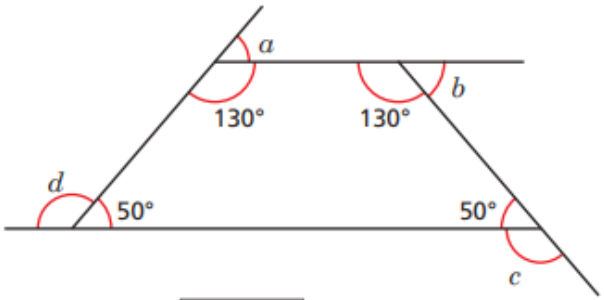
_____

3

Work out the size of the exterior angle of each polygon.

Then work out the sum of the exterior angles.

a)



$a + b + c + d =$ ☐

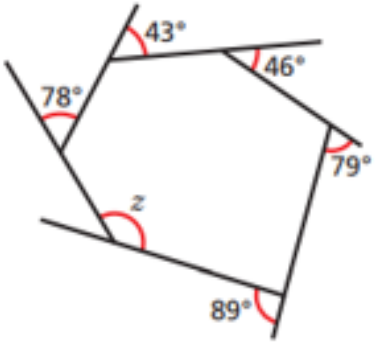
$a =$ ☐

$b =$ ☐

$c =$ ☐

$d =$ ☐

4 Here is an irregular hexagon



a) Work out the size of angle z

z=_____

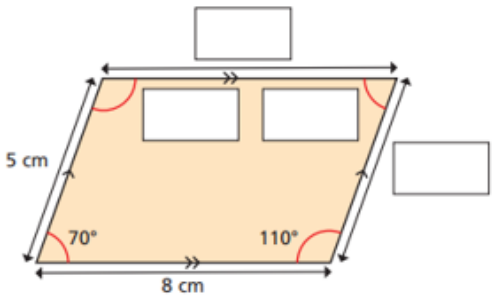
b) Did you use rules of interior or exterior angles?
Circle your answer

interior exterior

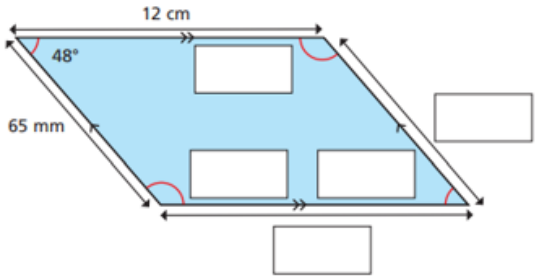
5 Here are some parallelograms

Find the unknown sides and angles and label the diagrams

a)

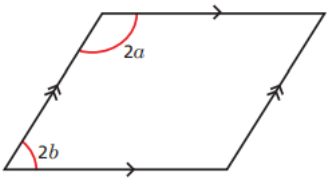


b)



6 Prove that the diagonals of a rhombus intersect at right angles.

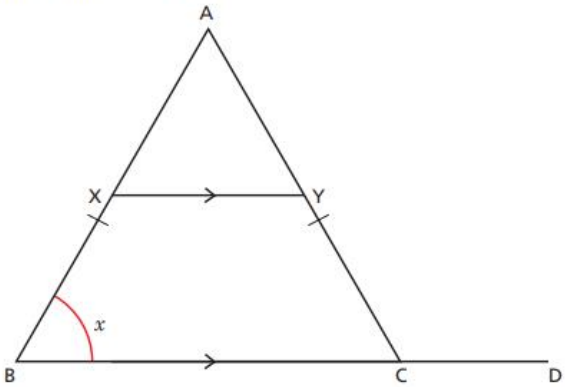
You can assume that a diagonal bisects each angle.



Show all your workings.

7 ABC is an isosceles triangle.

Line segments XY and BD are parallel.



Write an expression in terms of x for the size of each angle:

∠ACB = _____

∠AYX = _____

∠AXY = _____

∠BAC = _____

∠ACD = _____

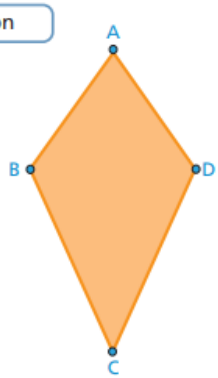
∠BXY = _____

∠XYC = _____

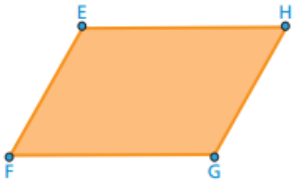
8 Ron and Rosie are using some geometric software to make kites.

They make these shapes.

Ron



Rosie



a) Who has made a kite? _____

b) Explain why one shape is a kite and the other is not.

_____

_____

Year 8 Higher - Angles in Parallel Lines and Polygons Questions

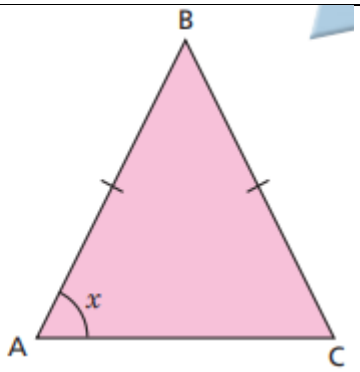
1

ABC is an isosceles triangle.

a) Write an expression for the size of angle ACB. _____

b) Show that angle ABC = $180 - 2x$

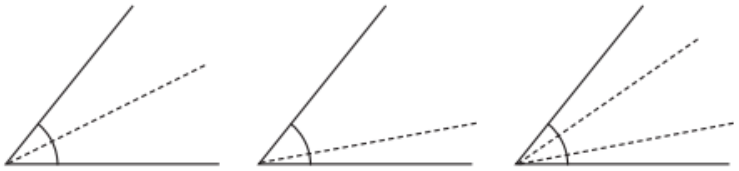
Give reasons to support your answer.



2

a) One of the diagrams shows an angle bisector.

Tick the diagram that shows an angle bisector.



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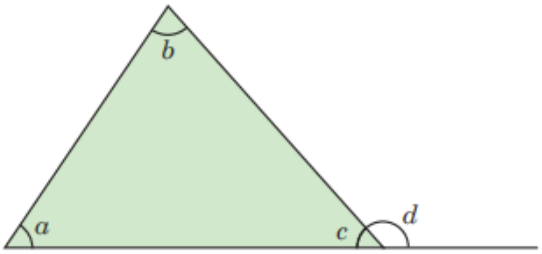
b) Explain why the others are not angle bisectors.

_____

_____

3

A triangle has interior angles a, b and c.



Show that $d = a + b$.

Give reasons to support your answer.

4

Use rules of parallel lines to prove that the sum of the angles in a triangle is 180°.