

Angles

Exam questions

Foundation and Higher tiers

Please write clearly in block capitals.

Name

Class

Teacher

Time allowed: 65 minutes

Materials

For this booklet you need a black pen, a pencil, a ruler, a rubber and a calculator for Section B.

Instructions

- Use black ink or black ballpoint pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions in the spaces provided.
- **Section A** (questions 1 to 13): you must not use a calculator.
- **Section B** (questions 14 to 20): you may use a calculator.
- Do all rough work in this booklet. Cross through any work you do not want marked.

Information

- The marks for each question are shown in brackets.
- The maximum mark for this booklet is 57.

Advice

- Read each question carefully.
- In all calculations, show clearly how you work out your answer.

For teacher's use

Q	Mark	Q	Mark
1		11	
2		12	
3		13	
4		14	
5		15	
6		16	
7		17	
8		18	
9		19	
10		20	
TOTAL			

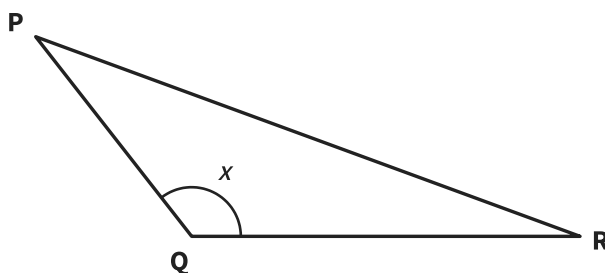
Section A



You must not use a calculator

Do not
write
outside
the box

- 1 Here is triangle PQR.



- (a) Use three letters to name angle x .

Answer _____

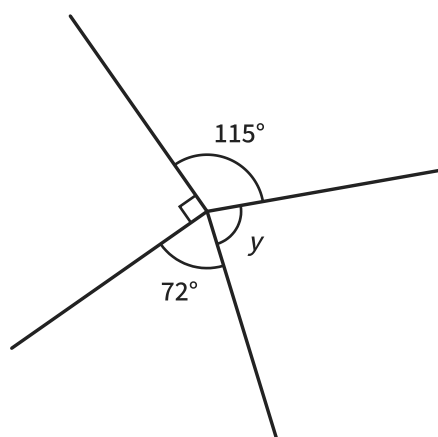
[1 mark]

- (b) Circle the word that describes angle x .

acute right obtuse reflex

[1 mark]

- 2 The diagram shows four angles at a point.



Not drawn accurately

Work out the size of angle y .
Give a reason for your answer.

Answer _____ degrees

[2 marks]

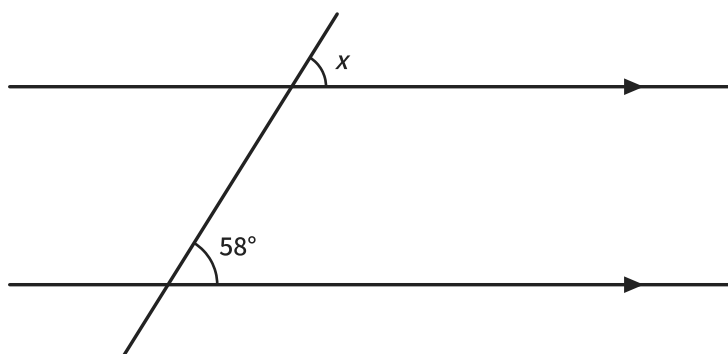
- 3** Kofi measures the four angles of a quadrilateral.
He writes down

82° 115° 97° 74°

Can Kofi's measurements all be correct?
You must show your working.

[2 marks]

- 4** The diagram shows two parallel lines and a straight line crossing them.



Not drawn accurately

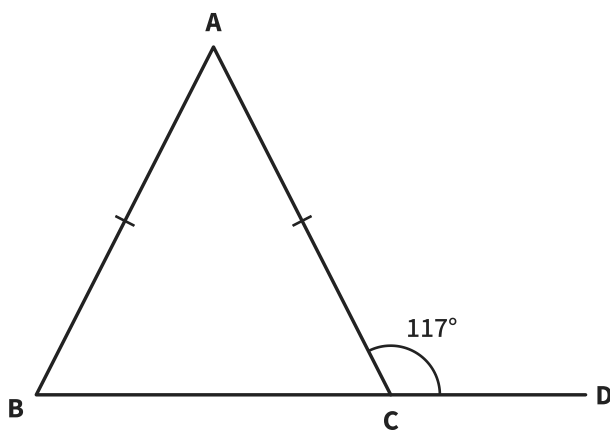
Write down the size of angle x .
Give a reason for your answer.

Answer _____ degrees

[2 marks]

- 5 ABC is an isosceles triangle with $AB = AC$.
BCD is a straight line.

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the box



Not drawn accurately

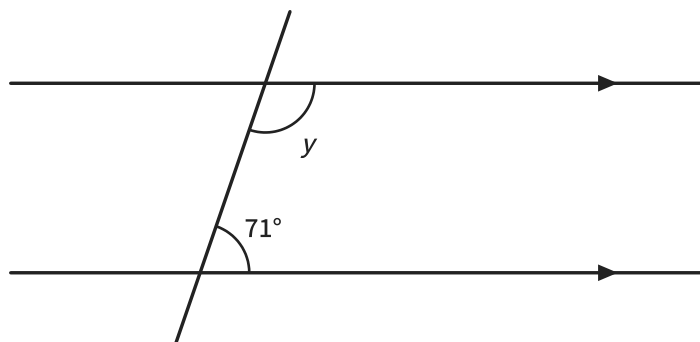
Work out the size of angle BAC.

Answer _____ degrees
[3 marks]

- 6 The diagram shows two parallel lines and a straight line crossing them.

Ryan writes

" $y = 71^\circ$ because co-interior angles are equal."



Not drawn accurately

- (a) Explain the mistake Ryan has made.

[1 mark]

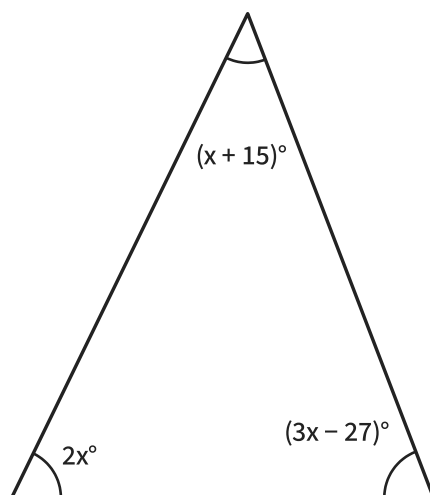
- (b) Work out the size of angle y .

Answer _____ degrees

[1 mark]

Do not
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outside
the box

- 7 The diagram shows a triangle.



Not drawn accurately

Work out the size of the largest angle.

Answer _____ degrees
[3 marks]

- 8 Each exterior angle of a regular polygon is 24°

(a) Work out the number of sides of the polygon.

Answer _____
[2 marks]

(b) Work out the sum of the interior angles of the polygon.

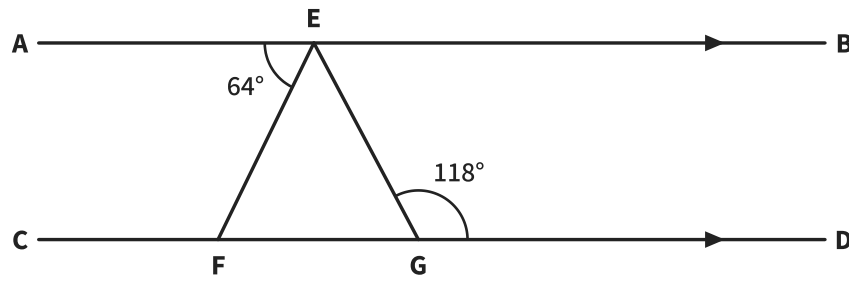
Answer _____ degrees
[2 marks]

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9

AB is parallel to CD.

E is a point on AB. F and G are points on CD.



Not drawn accurately

Work out the size of angle FEG.

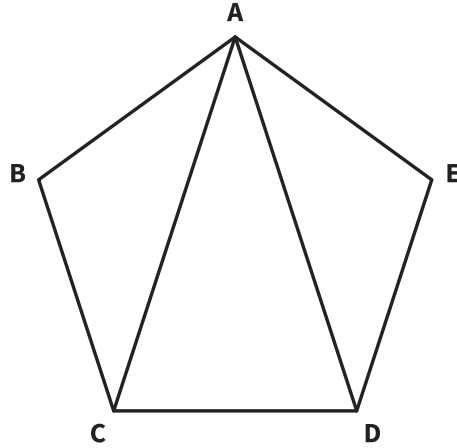
Give reasons for your answer.

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the box

Answer _____ degrees

[4 marks]

- 10** ABCDE is a regular pentagon.



Not drawn accurately

Show that $\text{angle CAD} = 36^\circ$

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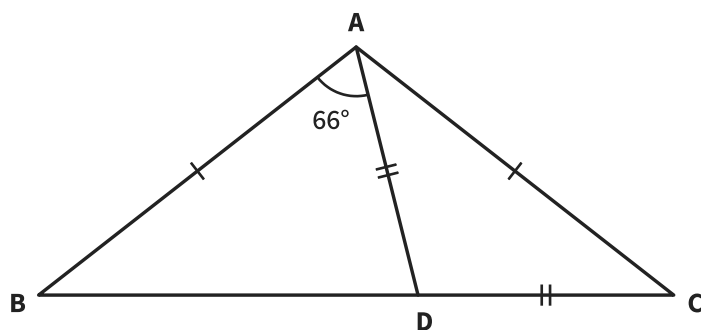
[3 marks]

11

ABC is a triangle with $AB = AC$.

D is the point on BC so that $AD = DC$.

Angle $BAD = 66^\circ$



Not drawn accurately

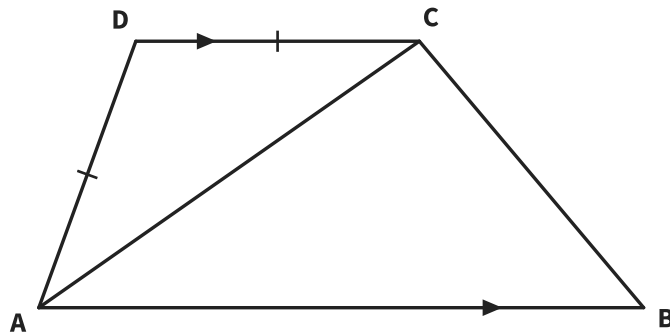
Work out the size of angle ADB.

You must show your working.

Answer _____ degrees
[4 marks]

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the box

- 12** ABCD is a trapezium.
AB is parallel to DC.
 $AD = DC$



Not drawn accurately

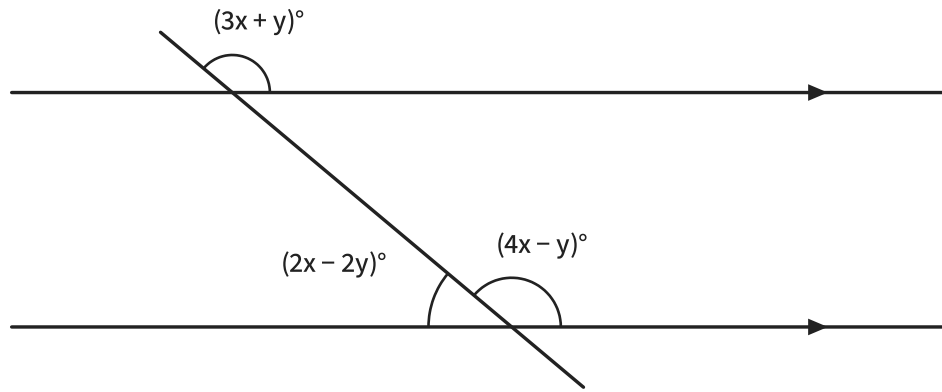
Prove that AC bisects angle DAB.

Do not
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outside
the box

[3 marks]

- 13** The diagram shows two parallel lines and a straight line crossing them.

Do not
write
outside
the box



Not drawn accurately

Work out the value of x and the value of y .

$x =$ _____ $y =$ _____

[5 marks]

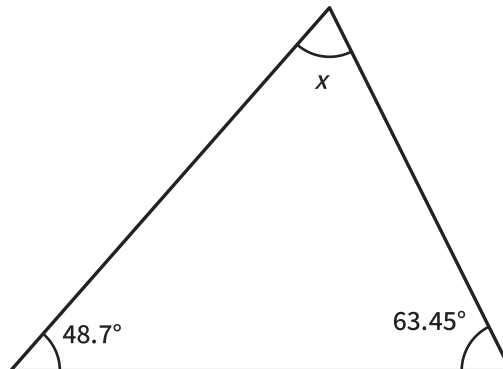
Section B



You may use a calculator

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- 14** The diagram shows a triangle.



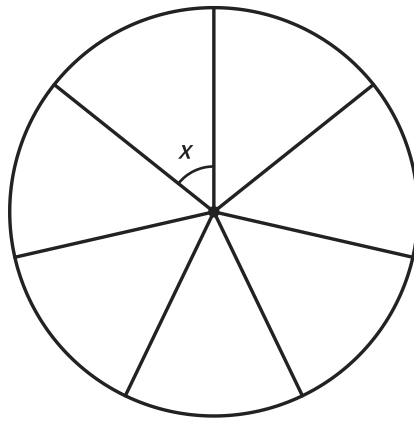
Not drawn accurately

Work out the size of angle x .

Answer _____ degrees
[2 marks]

15

A pizza is cut into 7 equal slices.
Every cut goes from the centre of the pizza to the edge.



Not drawn accurately

Work out the size of angle x , the angle at the centre of one slice.
Give your answer to 1 decimal place.

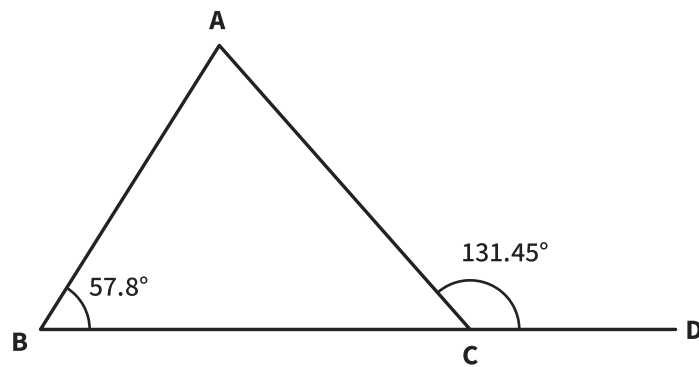
Answer _____ degrees
[2 marks]

Do not
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outside
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16

ABC is a triangle.
BCD is a straight line.

Do not
write
outside
the box



Not drawn accurately

Work out the size of angle BAC.
Give reasons for your answer.

Answer _____ degrees
[3 marks]

17

Three angles meet at a point.
The sizes of the angles are in the ratio 5 : 6 : 8

Work out the size of the largest angle.
Give your answer to 1 decimal place.

Answer _____ degrees
[3 marks]

- 18** The floor of a bandstand is a regular polygon with 14 sides.

Work out the size of one interior angle of the polygon.
Give your answer to 1 decimal place.

Answer _____ degrees

[3 marks]

- 19** Jade says,
"A regular polygon can have an interior angle of 155° "

Is Jade correct?
You must show your working.

[2 marks]

- 20** A polygon has n sides.
One of its interior angles is 110°
Each of its other interior angles is 151°

Work out the value of n .

Answer _____

[3 marks]

END OF QUESTIONS