



ACHIEVE ACADEMY

GCSE Maths — Higher Tier

Angles & Parallel Lines · Practice Booklet

NAME:

CLASS:

DATE:

☐ Developing

☒ Secure

☐ Greater Depth

Answer every question in the working space provided. Method marks are available for correct working even if the final answer is wrong. Check the time allowed with your tutor before you start.

Angles & Parallel Lines

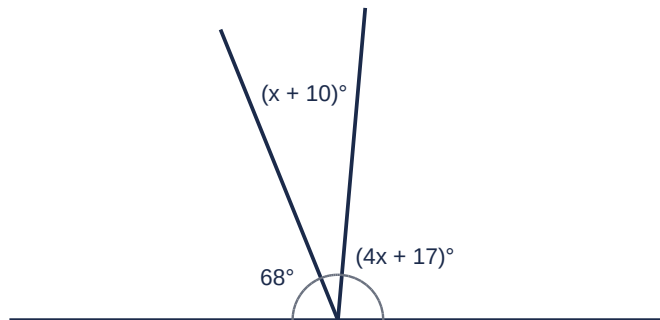
Total marks available: 110

● Angles & Parallel Lines

Q1

[4 marks]

The three angles below lie on a straight line. Form and solve an equation to find the value of x . Then state the size of the angle marked $(4x + 17)^\circ$.

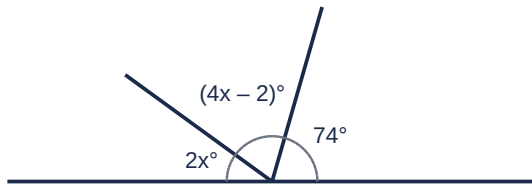


A large dashed rectangular box for writing the solution.

Q2

[4 marks]

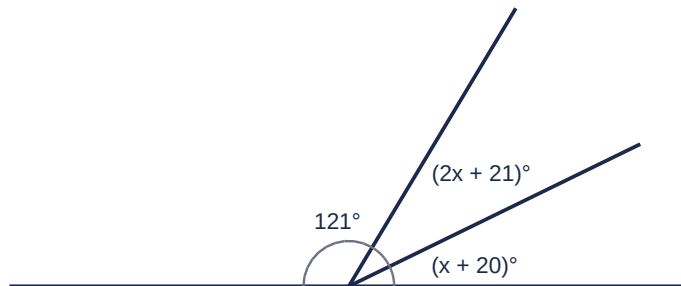
The three angles below lie on a straight line. Form and solve an equation to find the value of x . Then state the size of the angle marked $2x^\circ$.



Q3

[4 marks]

The three angles below lie on a straight line. Form and solve an equation to find the value of x . Then state the size of the angle marked $(x + 20)^\circ$.

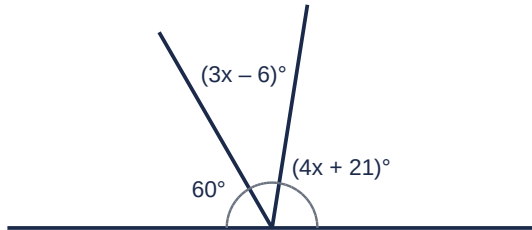


A large dashed rectangular box for writing the solution.

Q4

[4 marks]

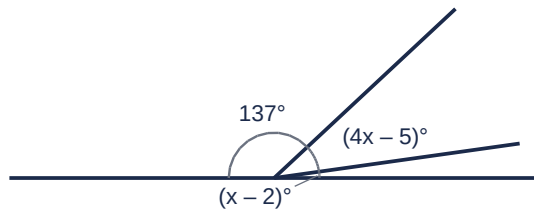
The three angles below lie on a straight line. Form and solve an equation to find the value of x . Then state the size of the angle marked $(4x + 21)^\circ$.



Q5

[4 marks]

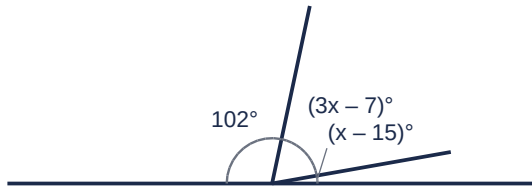
The three angles below lie on a straight line. Form and solve an equation to find the value of x . Then state the size of the angle marked $(x - 2)^\circ$.



Q6

[4 marks]

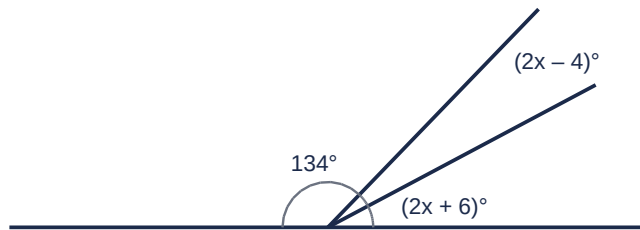
The three angles below lie on a straight line. Form and solve an equation to find the value of x . Then state the size of the angle marked $(x - 15)^\circ$.



Q7

[4 marks]

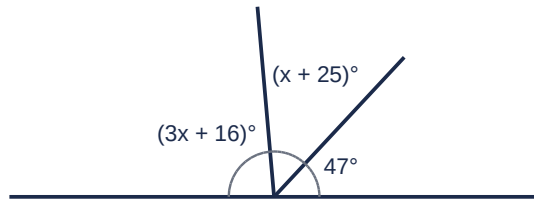
The three angles below lie on a straight line. Form and solve an equation to find the value of x . Then state the size of the angle marked $(2x + 6)^\circ$.



Q8

[4 marks]

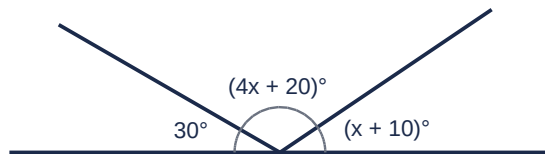
The three angles below lie on a straight line. Form and solve an equation to find the value of x . Then state the size of the angle marked $(3x + 16)^\circ$.



Q9

[4 marks]

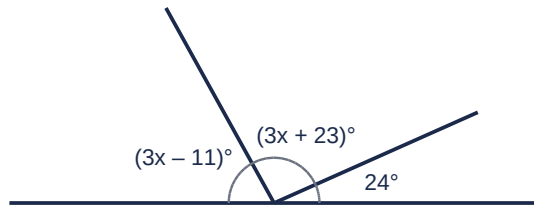
The three angles below lie on a straight line. Form and solve an equation to find the value of x . Then state the size of the angle marked $(x + 10)^\circ$.



Q10

[4 marks]

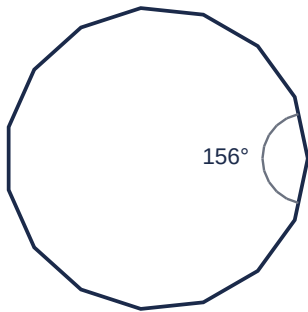
The three angles below lie on a straight line. Form and solve an equation to find the value of x . Then state the size of the angle marked $(3x - 11)^\circ$.



Q11

[3 marks]

A regular polygon has an interior angle of 156° . How many sides does the polygon have?

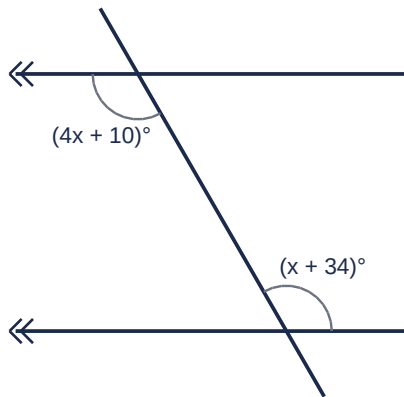


A large rectangular area with a dashed border, intended for the student to write their answer.

Q12

[3 marks]

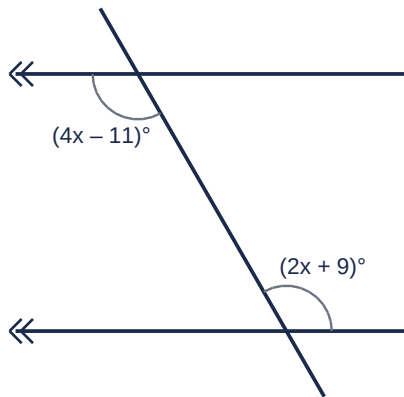
The lines below are parallel. Given that these are alternate angles (so they are equal), form and solve an equation to find x .



Q13

[3 marks]

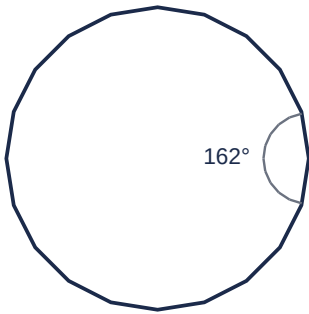
The lines below are parallel. Given that these are alternate angles (so they are equal), form and solve an equation to find x .



Q14

[3 marks]

A regular polygon has an interior angle of 162° . How many sides does the polygon have?

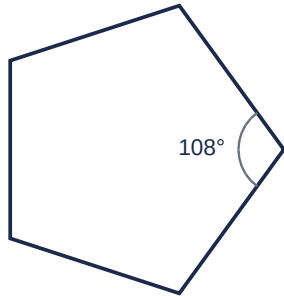


A large rectangular area with a dashed border, intended for the student to write their answer.

Q15

[3 marks]

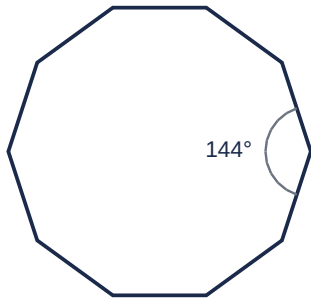
A regular polygon has an interior angle of 108° . How many sides does the polygon have?



Q16

[3 marks]

A regular polygon has an interior angle of 144° . How many sides does the polygon have?

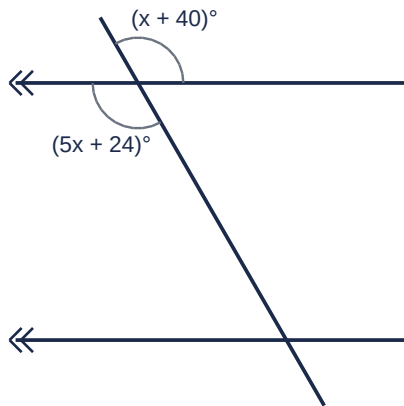


A large rectangular area with a dashed border, intended for the student to write their answer.

Q17

[3 marks]

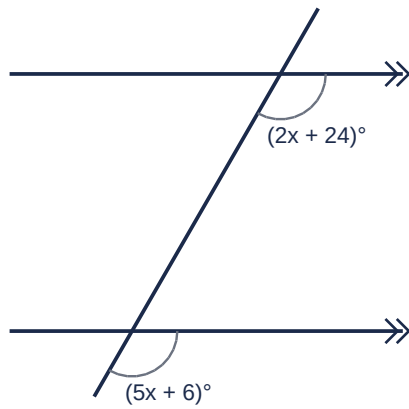
The lines below are parallel. Given that these are vertically opposite angles (so they are equal), form and solve an equation to find x .



Q18

[3 marks]

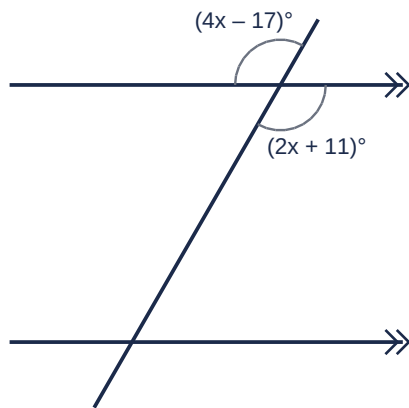
The lines below are parallel. Given that these are corresponding angles (so they are equal), form and solve an equation to find x .



Q19

[3 marks]

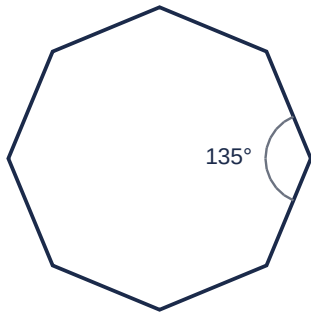
The lines below are parallel. Given that these are vertically opposite angles (so they are equal), form and solve an equation to find x .



Q20

[3 marks]

A regular polygon has an interior angle of 135° . How many sides does the polygon have?

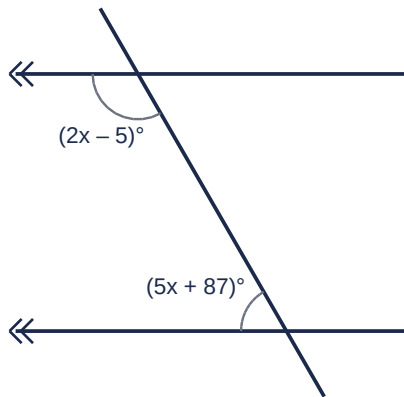


A large dashed rectangular box for writing the answer.

Q21

[4 marks]

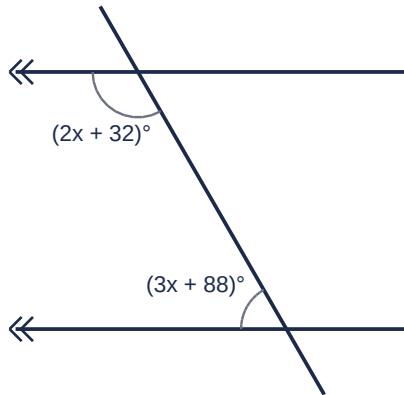
The lines below are parallel. Given that these are co-interior angles (they sum to 180°), form and solve an equation to find x . Then calculate the size of the angle marked $(2x - 5)^\circ$.



Q22

[4 marks]

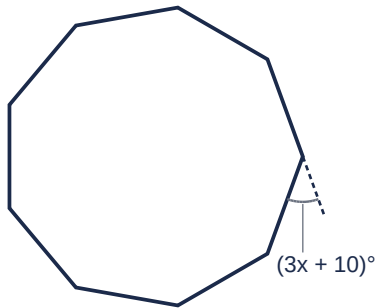
The lines below are parallel. Given that these are co-interior angles (they sum to 180°), form and solve an equation to find x . Then calculate the size of the angle marked $(2x + 32)^\circ$.



Q23

[4 marks]

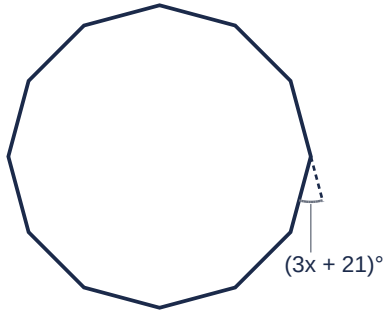
The diagram shows a regular polygon with 9 sides. Each exterior angle is $(3x + 10)^\circ$. Form and solve an equation to find x .



Q24

[4 marks]

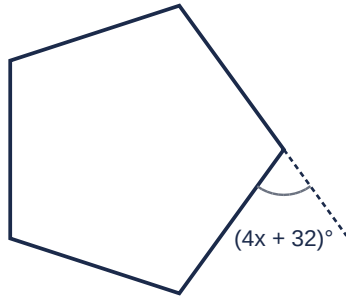
The diagram shows a regular polygon with 12 sides. Each exterior angle is $(3x + 21)^\circ$. Form and solve an equation to find x .



Q25

[4 marks]

The diagram shows a regular polygon with 5 sides. Each exterior angle is $(4x + 32)^\circ$. Form and solve an equation to find x .

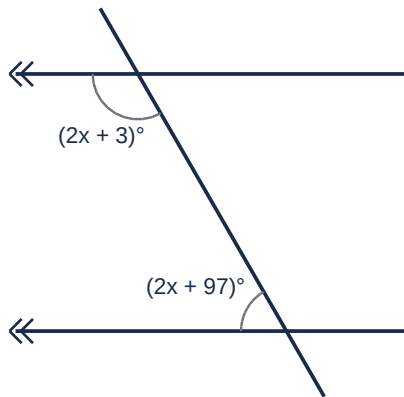


A large dashed rectangular box for writing the solution.

Q26

[4 marks]

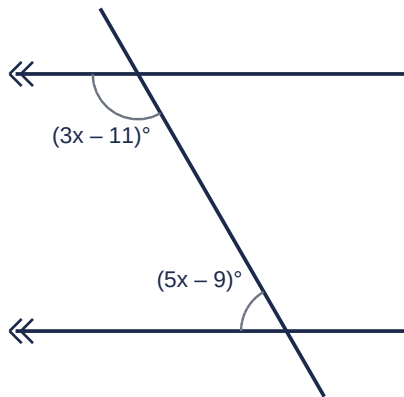
The lines below are parallel. Given that these are co-interior angles (they sum to 180°), form and solve an equation to find x . Then calculate the size of the angle marked $(2x + 3)^\circ$.



Q27

[4 marks]

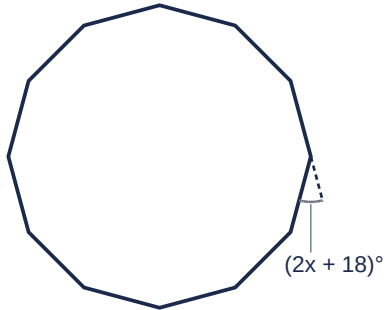
The lines below are parallel. Given that these are co-interior angles (they sum to 180°), form and solve an equation to find x . Then calculate the size of the angle marked $(3x - 11)^\circ$.



Q28

[4 marks]

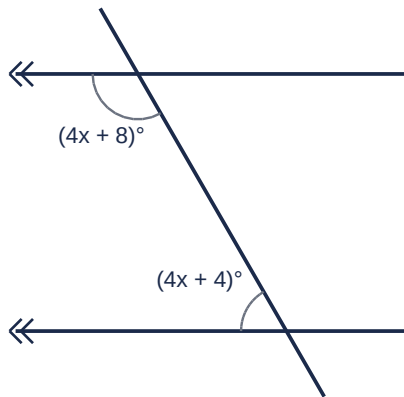
The diagram shows a regular polygon with 12 sides. Each exterior angle is $(2x + 18)^\circ$. Form and solve an equation to find x .



Q29

[4 marks]

The lines below are parallel. Given that these are co-interior angles (they sum to 180°), form and solve an equation to find x . Then calculate the size of the angle marked $(4x + 8)^\circ$.



Q30

[4 marks]

The diagram shows a regular polygon with 10 sides. Each exterior angle is $(x + 26)^\circ$. Form and solve an equation to find x .

