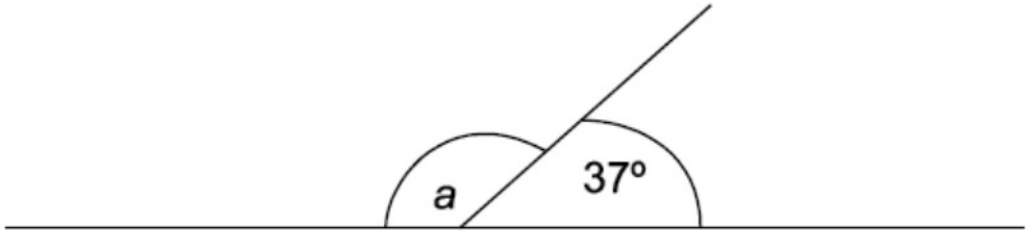
G4...Angles - Line and Point

OCR

3 Work out the angles marked with letters.

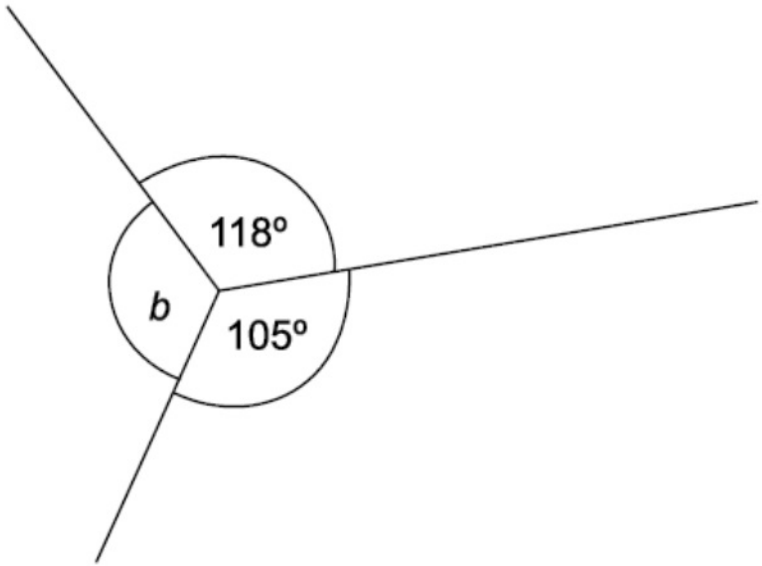
(a)

Not to scale



(a) a = ……° **[1]**

(b)



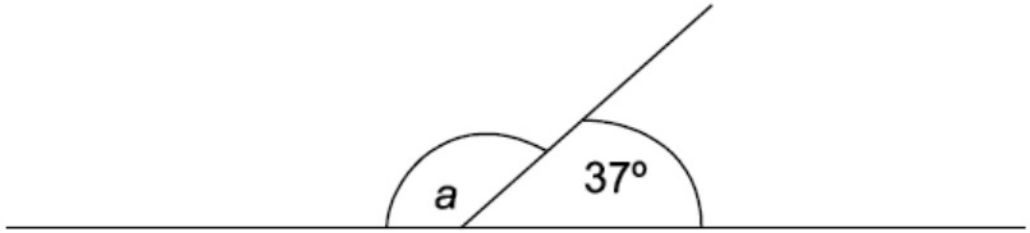
Not to scale

(b) b = ……° **[1]**

3 Work out the angles marked with letters.

(a)

Not to scale

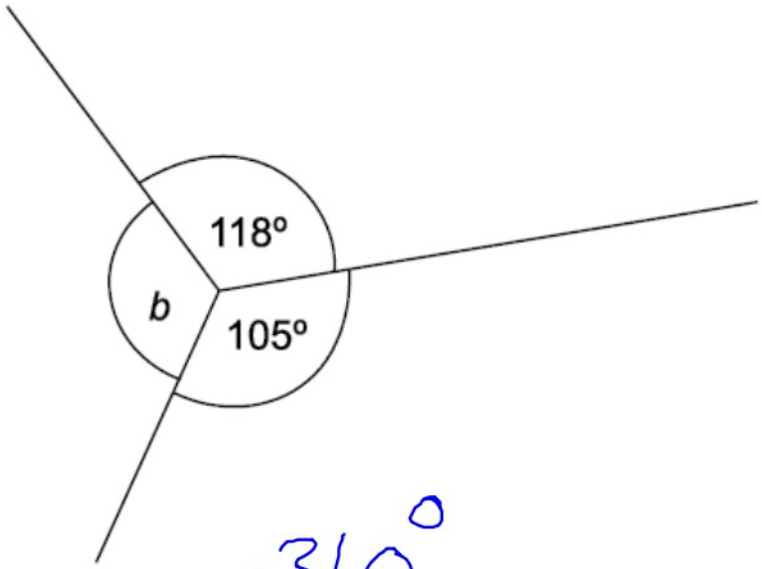


$= 180^{\circ}$

$180^{\circ} - 37^{\circ}$

(a) $a =$ 143° **[1]**

(b)

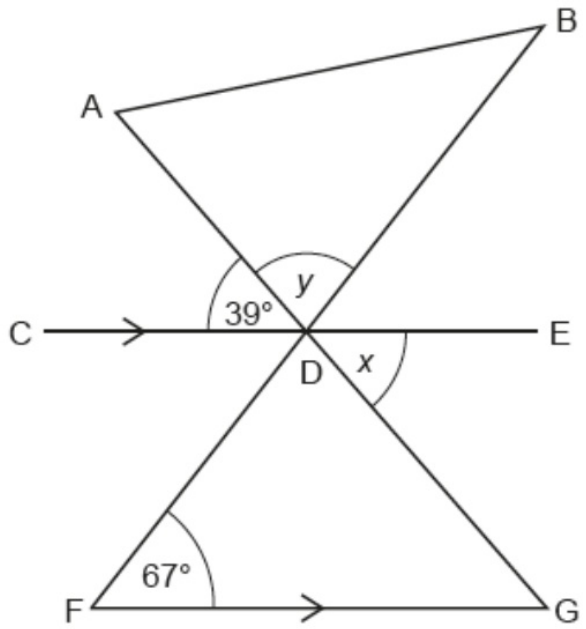


Not to scale

$= 360^{\circ}$

(b) b = 137 ° **[1]**

6 In the diagram, CDE is parallel to FG.
ADG and BDF are straight lines.



Not to scale

(a) Complete the sentence with a reason.

Angle $x = 39°$ because ..... **[1]**

(b) Work out angle y.

(b) .....° **[3]**

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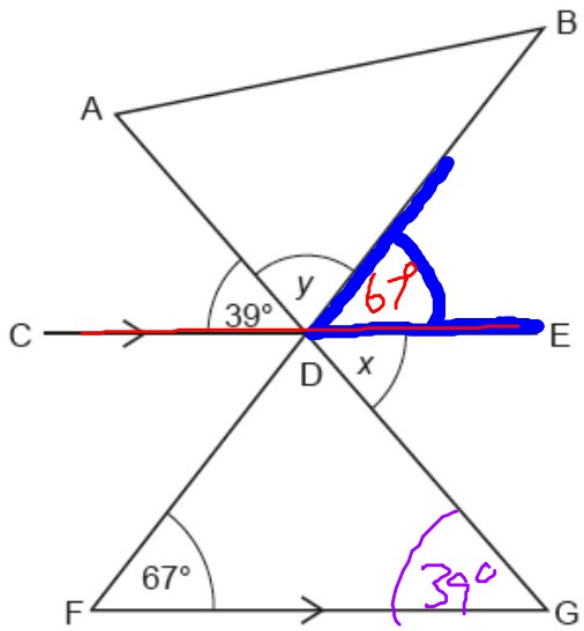
6 In the diagram, CDE is parallel to FG.
ADG and BDF are straight lines.



Not to scale

Angle BDE is 67° as it corresponds (f angle) with angle DFG

67
+ 39
106

Straight lines add to 180°

180° - 39° - 67°
= 74°

(a) Complete the sentence with a reason.

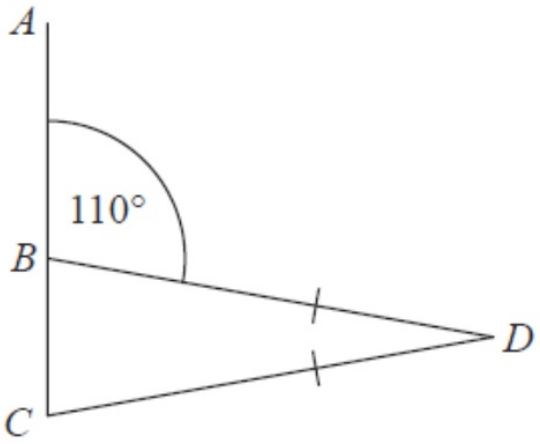
Angle $x = 39°$ because Vertically opposite angles are equal [1]

(b) Work out angle y.

(b) 74° [3]

Edexcel

15



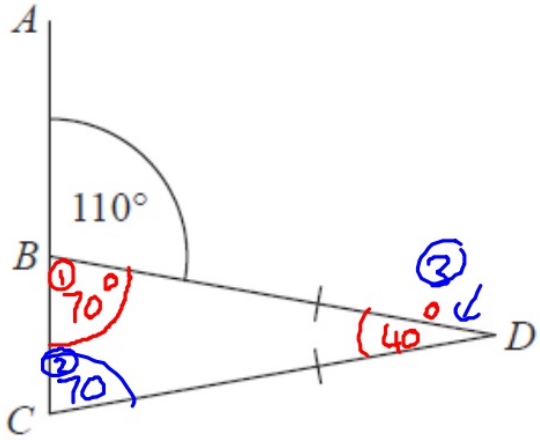
ABC is a straight line.
$BD = CD$
Angle $ABD = 110°$

Show that angle $BDC = 40°$

Give a reason for each stage of your working.

(Total for Question 15 is 4 marks)

15



ABC is a straight line.
BD = *CD*
Angle *ABD* = 110°

Show that angle *BDC* = 40°

Give a reason for each stage of your working.

① → 70° because angles on a straight line add to 180°

② → 70° as triangle BCD is isosceles and both base angles are equal

③ Angle BDC = 40° as angles in a triangle add to 180°

(Total for Question 15 is 4 marks)

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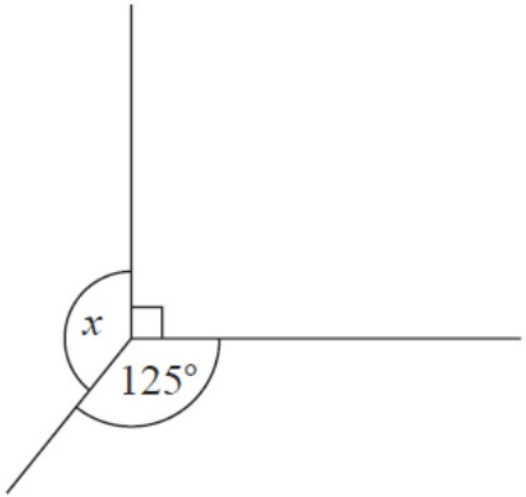
10

G4



Work out the size of the angle marked x.

.....°

(Total for Question 10 is 2 marks)

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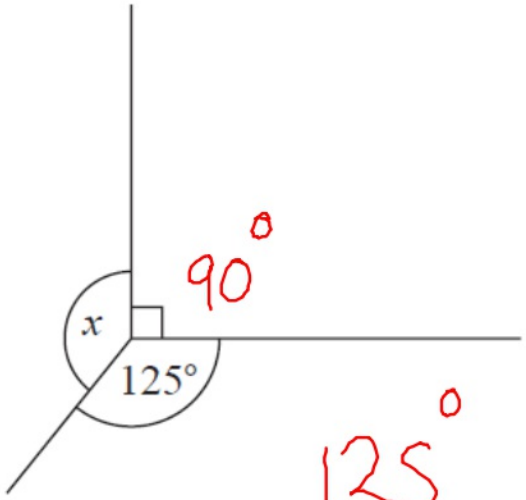
10

G4



90°

125°
+ 90
215

360
- 215
145

Work out the size of the angle marked x.

145 °

(Total for Question 10 is 2 marks)

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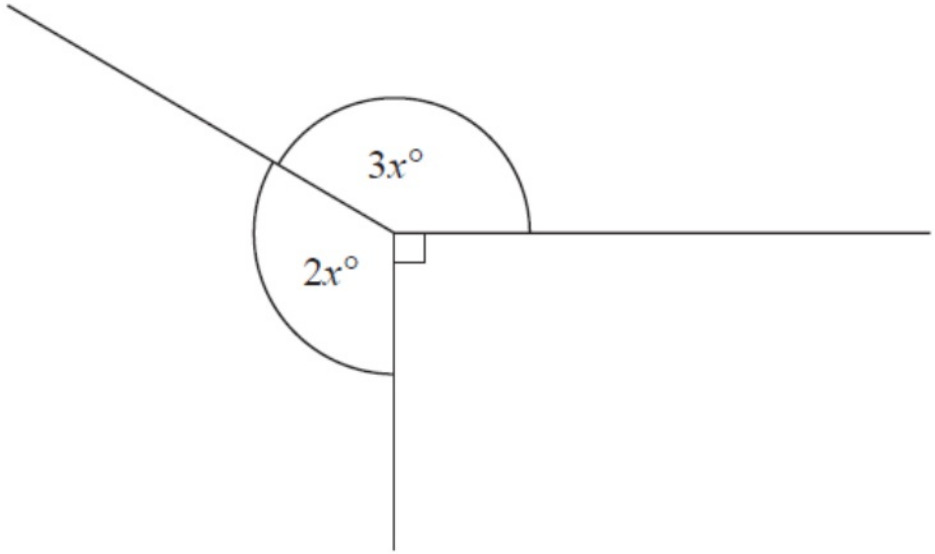
9



Find the value of x.

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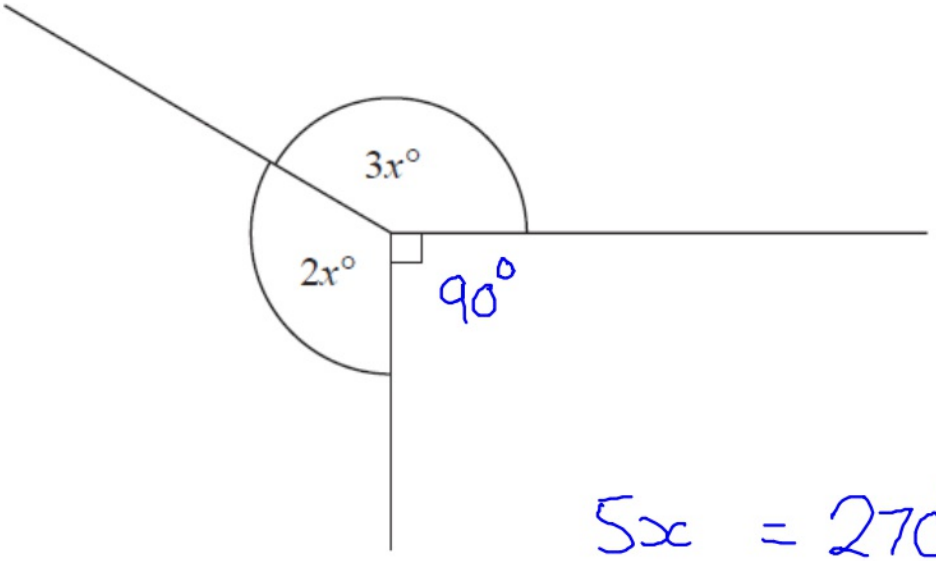
9



Find the value of x.

○ = 360°

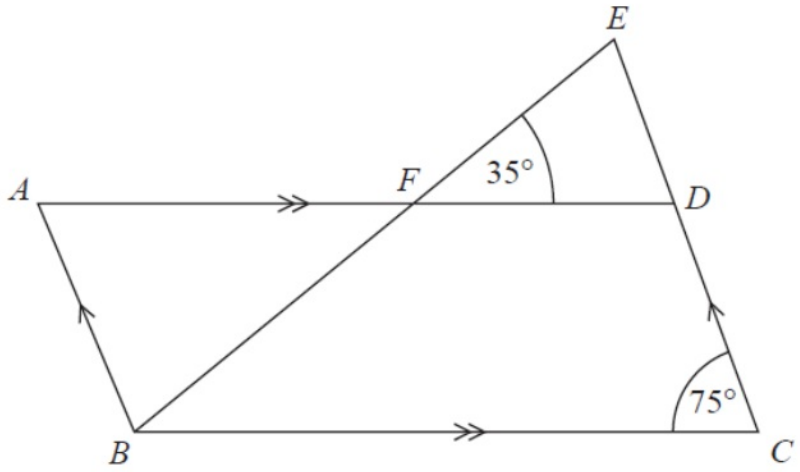
360 − 90 = 270°

$5x = 270^\circ$

$x = \frac{270}{5}$

$x = 54^\circ$ ✓

25



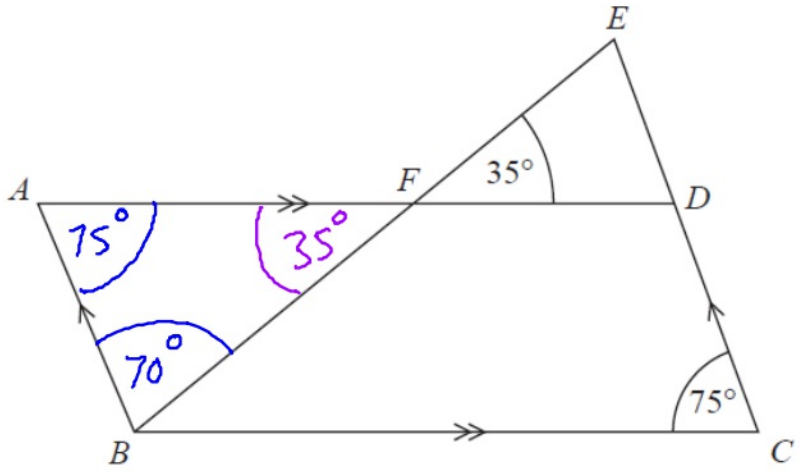
ABCD is a parallelogram.
EDC is a straight line.
F is the point on *AD* so that *BFE* is a straight line.

Angle *EFD* = 35°
Angle *DCB* = 75°

Show that angle *ABF* = 70°
Give a reason for each stage of your working.

(Total for Question 25 is 4 marks)

25



ABCD is a parallelogram.
EDC is a straight line.
F is the point on *AD* so that *BFE* is a straight line.

Angle *EFD* = 35°
Angle *DCB* = 75°

Show that angle *ABF* = 70°
Give a reason for each stage of your working.

Angle BAF = 75° as opposite angles are equal in a parallelogram

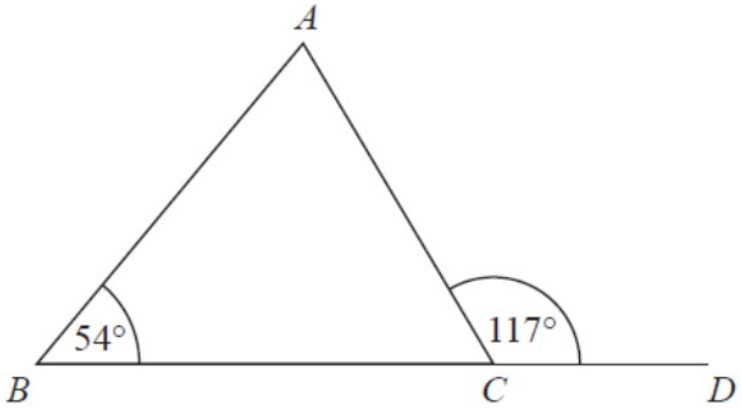
Angle AFB = 35° as vertically opposite angles are equal

Angle ABF = 70° as angles in a △ add up to 180°

75 + 70 + 35 = 180° ✓

(Total for Question 25 is 4 marks)

7



BCD is a straight line.
ABC is a triangle.

Show that triangle *ABC* is an isosceles triangle.
Give a reason for each stage of your working.

(Total for Question 7 is 4 marks)

7

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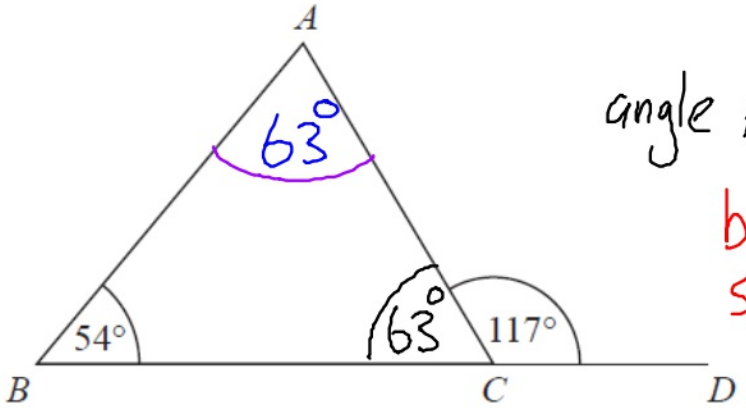

angle ACB = 63°

because angles on a straight line add to 180°

BCD is a straight line.
ABC is a triangle.

Show that triangle *ABC* is an isosceles triangle.
Give a reason for each stage of your working.

angle BAC = 63°

because angles in a △ add to 180°

This is an isosceles triangle as it has two angles that are equal.

(Total for Question 7 is 4 marks)

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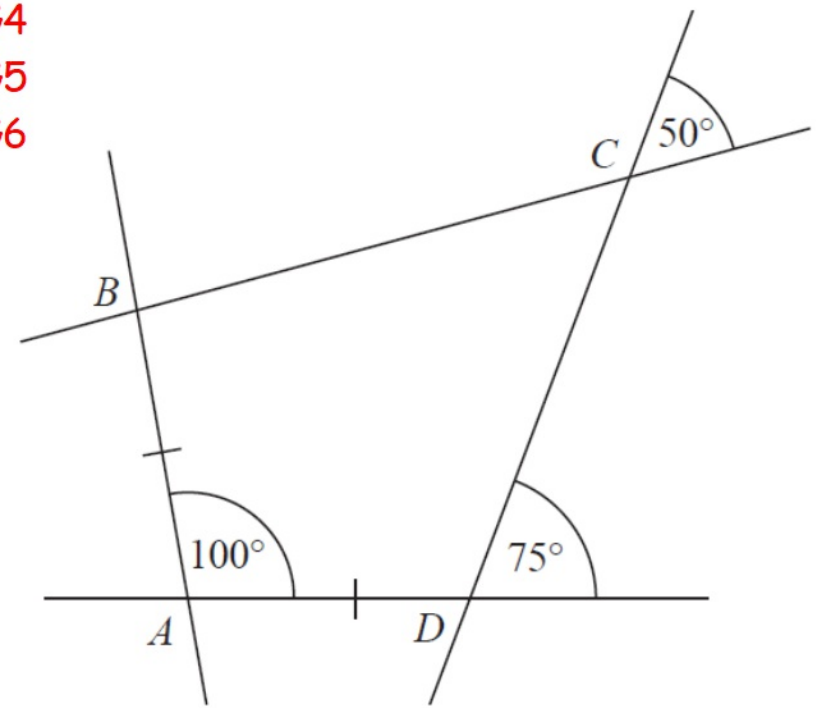
14 The diagram shows quadrilateral $ABCD$ with each of its sides extended.

G4
G5
G6



$AB = AD$

Show that $ABCD$ is a kite.
Give a reason for each stage of your working.

(Total for Question 14 is 4 marks)

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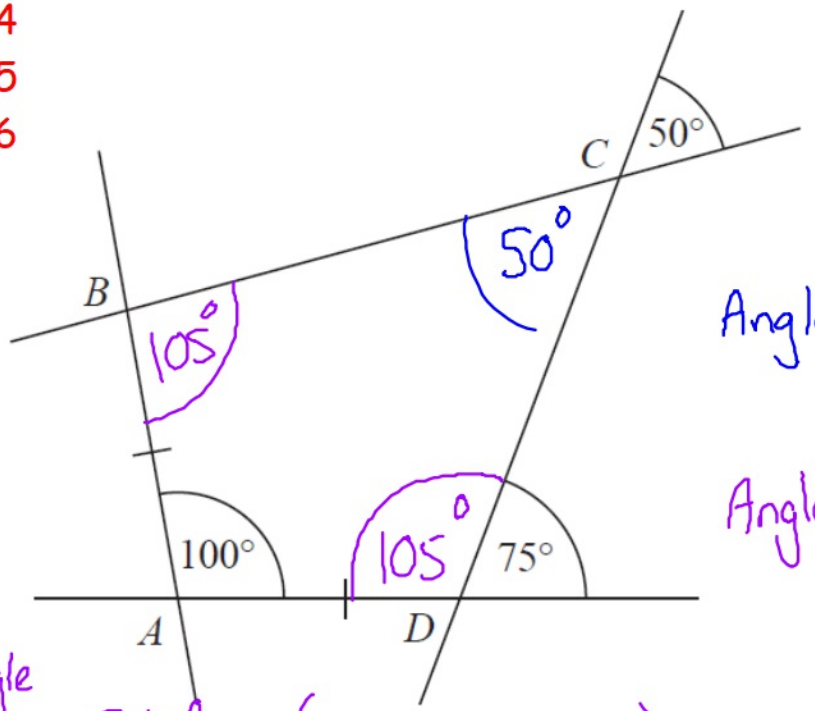
14 The diagram shows quadrilateral $ABCD$ with each of its sides extended.

G4
G5
G6



$AB = AD$

Show that $ABCD$ is a kite.
Give a reason for each stage of your working.

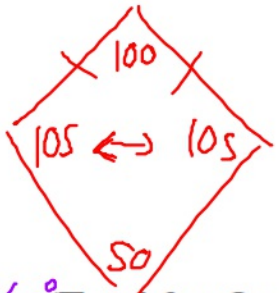
Angle BCD = 50°, because vertically opposite angles are equal.

Angle ADC = 105° as angles on a Straight line add to 180°

Angle ABC = $360° - (100 + 105 + 50)$

$360 - 255$

$= 105°$ ... angles in a quad add to 360°



... This is Kite with opposite angles both 105° ✓

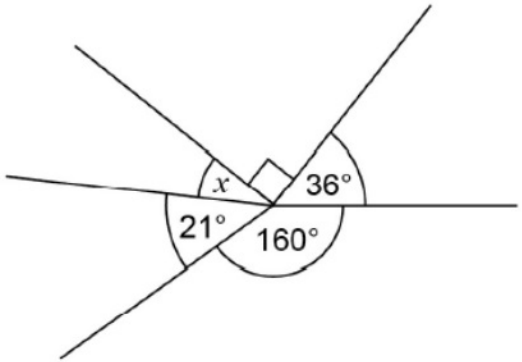
(Total for Question 14 is 4 marks)

AQA

13

Video created by W Neill

G4



Not drawn accurately

Work out the size of angle x.

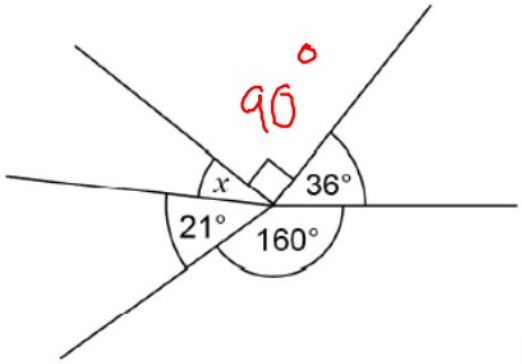
[2 marks]

Answer _____ degrees

Video created by W Neill

13

G4



Not drawn accurately

360°

Work out the size of angle x.

[2 marks]

$x = 360 - 307$

Answer 53 ✓ degrees

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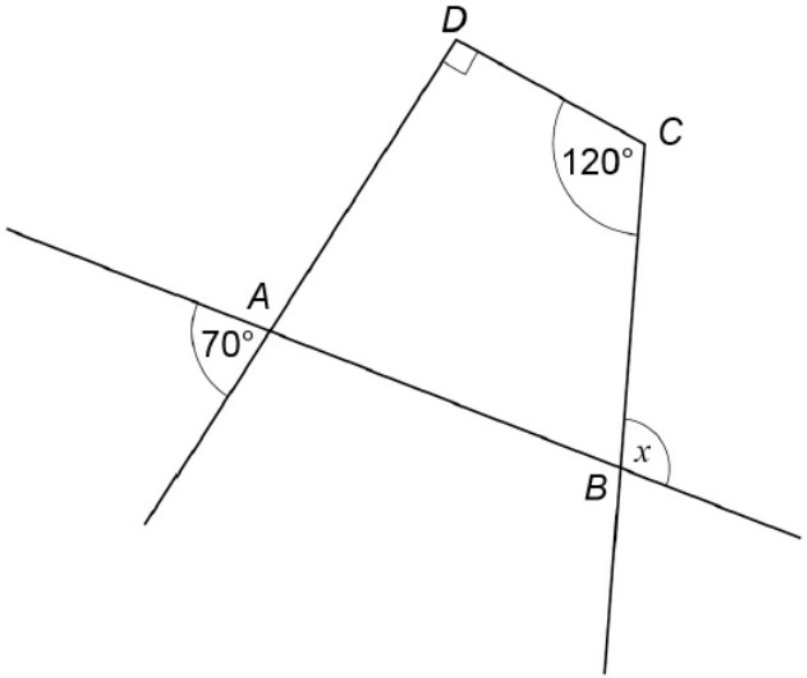
18 *ABCD* is a quadrilateral.

G4-5-6 Sides are extended as shown.



Not drawn accurately

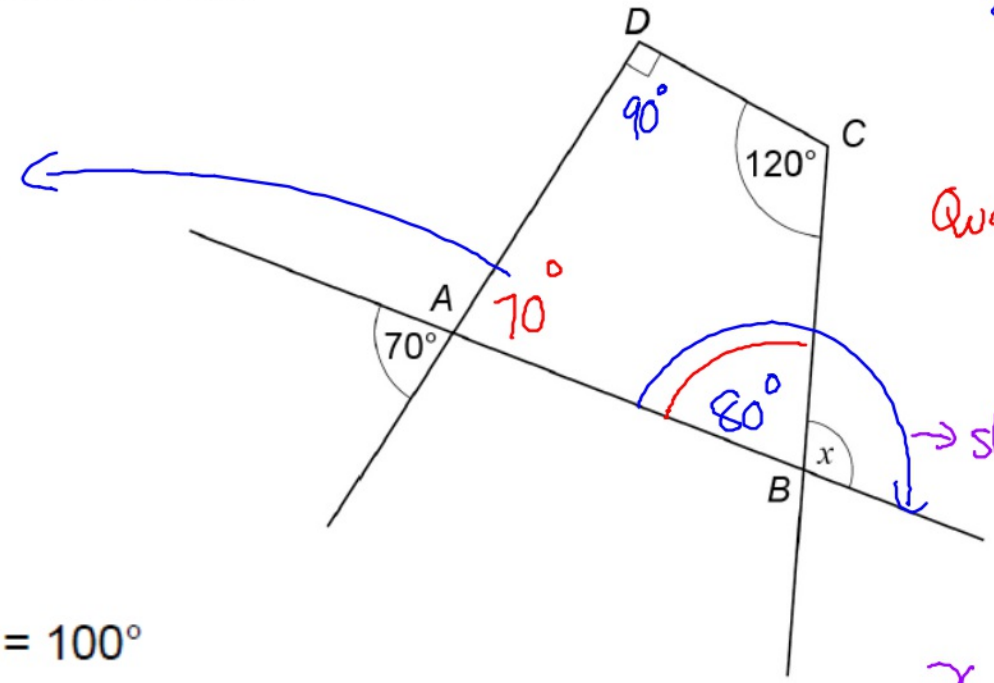
Show that $x = 100°$

[3 marks]

Video created by W Neill

18 *ABCD* is a quadrilateral.

G4-5-6 Sides are extended as shown.



Not drawn accurately

120 + 90 + 70

280

Quad = 360°

− 280

vertically opposite angles are equal

→ straight line

180° − 80°

x = 100° ✓

✓

Show that $x = 100°$

[3 marks]

Video created by W Neill

16 (a) *BCD* is a straight line.

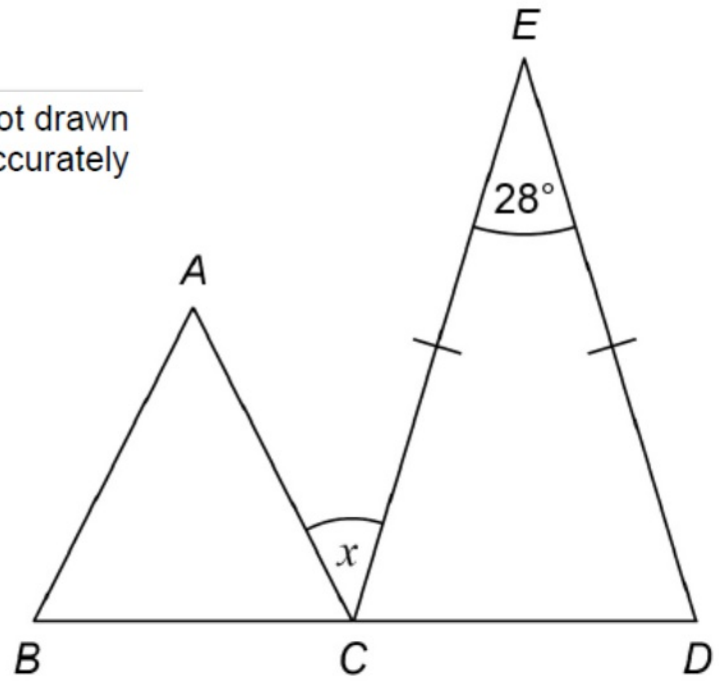
Triangle *ABC* is equilateral.

CE = *DE*

G4
G5

Work out the size of angle x. **[4 marks]**

Not drawn accurately



Answer _____ degrees

Video created by W Neill

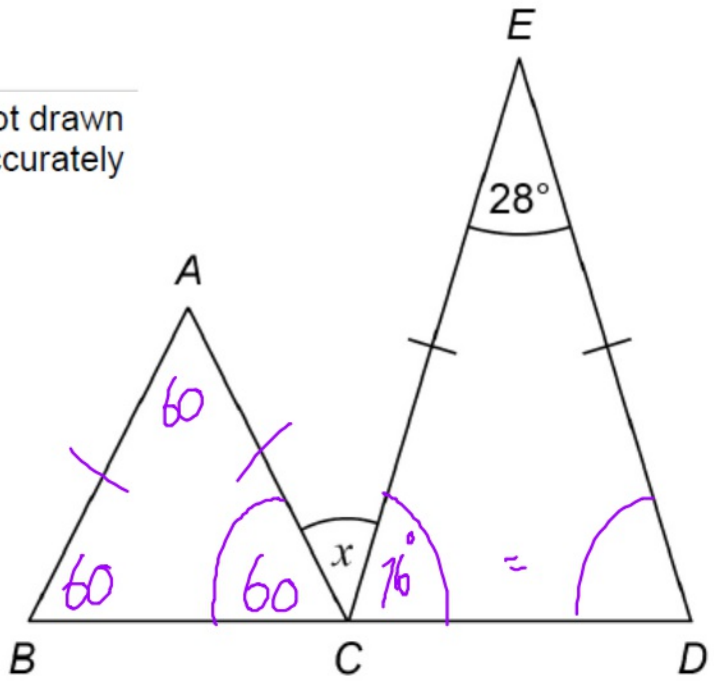
16 (a) *BCD* is a straight line.

Triangle *ABC* is equilateral.

CE = *DE*

G4
G5

Work out the size of angle x. **[4 marks]**



Not drawn accurately

$x^\circ = 180^\circ - 76^\circ - 60^\circ$

$=$

Answer 44 ✓ degrees

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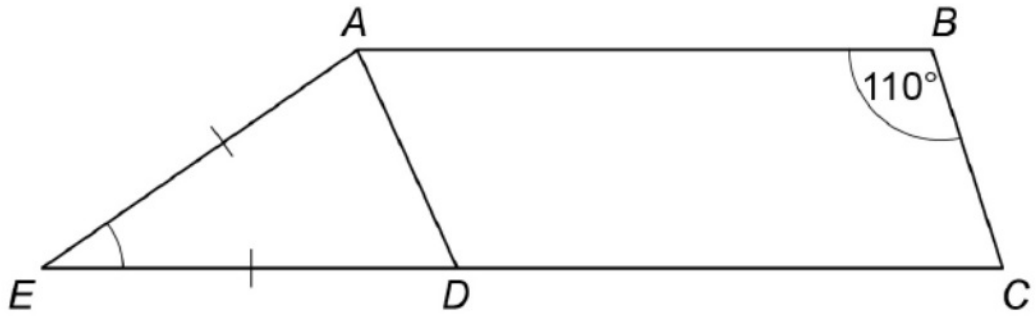
15 Trapezium *ABCE* is made from parallelogram *ABCD* and isosceles triangle *ADE*.

AE = *DE*

G4
G5
G6



Not drawn accurately

Work out the size of angle *AED*.

[3 marks]

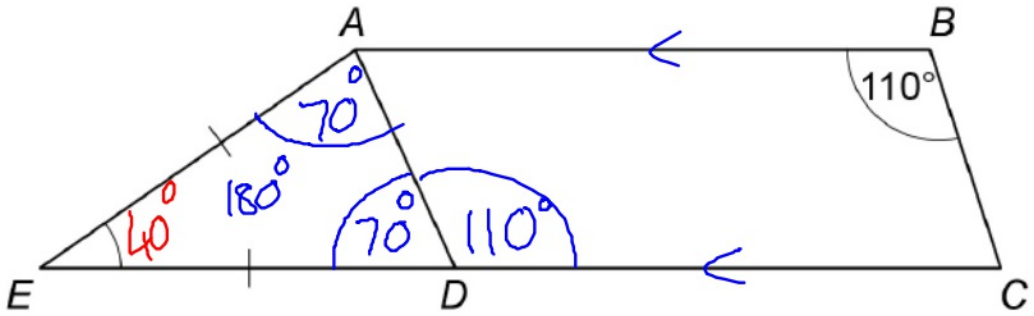
Answer _____ degrees

Video created by W Neill

15 Trapezium *ABCE* is made from parallelogram *ABCD* and isosceles triangle *ADE*.

AE = *DE*

G4
G5
G6



Not drawn accurately

Work out the size of angle *AED*.

[3 marks]

$180^\circ - 70 - 70 = 40^\circ$

Answer 40 degrees

Video created by W Neill

4 What is the angle of turn clockwise from South West to East?

G4

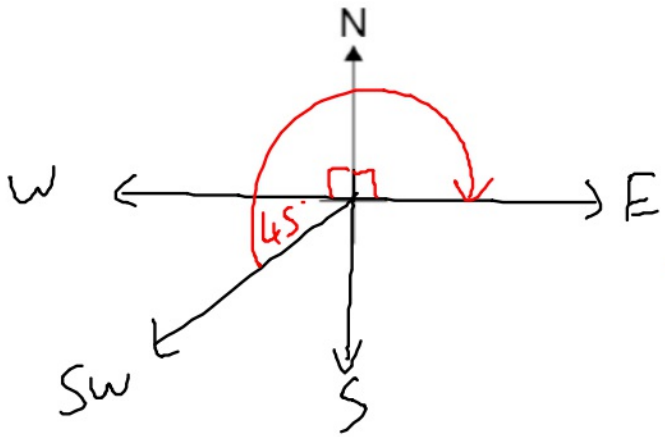
Circle your answer.

[1 mark]

45° 135° 225° 315°

4 What is the angle of turn clockwise from South West to East?

G4



180
+ 45
225°

Circle your answer.

[1 mark]

45° 135° 225° 315°