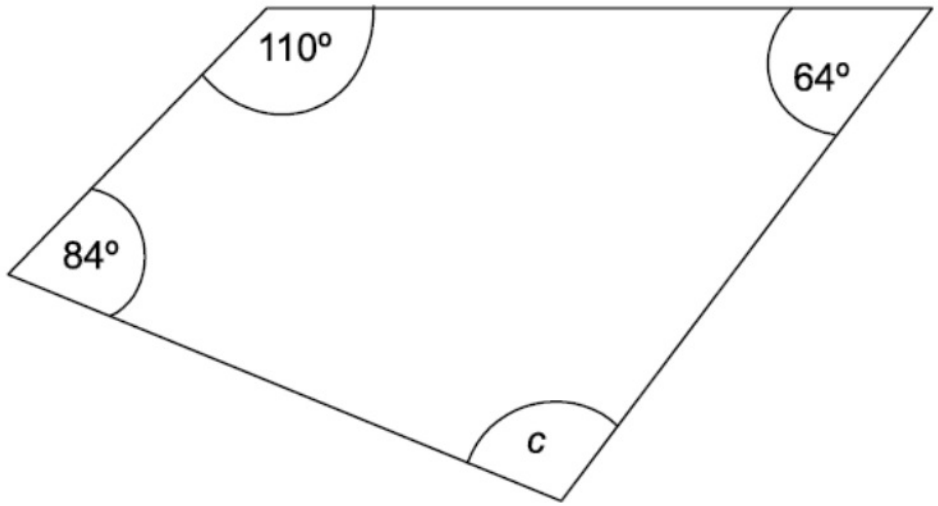
G6...Angles - Quadrilaterals

OCR

(c)

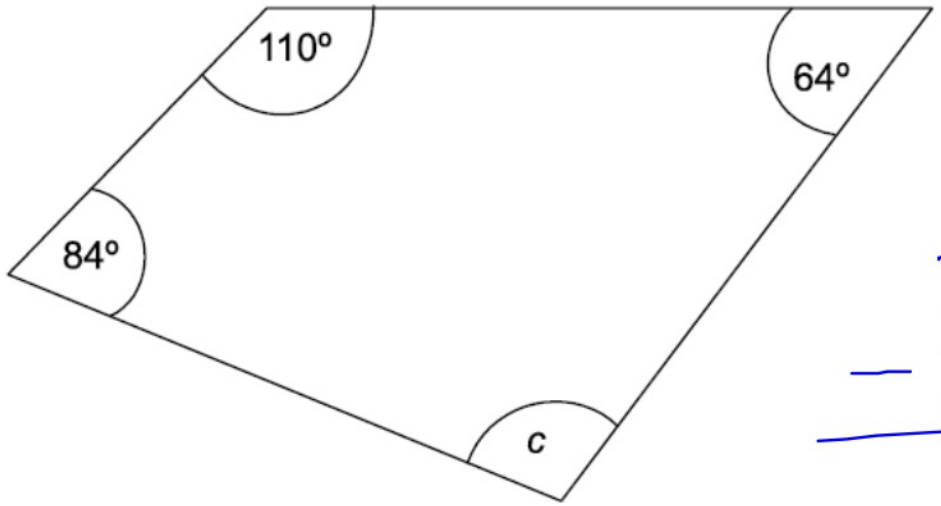


Not to scale

(c) c = ……° **[2]**

Quad → 360°

(c)



Not to scale

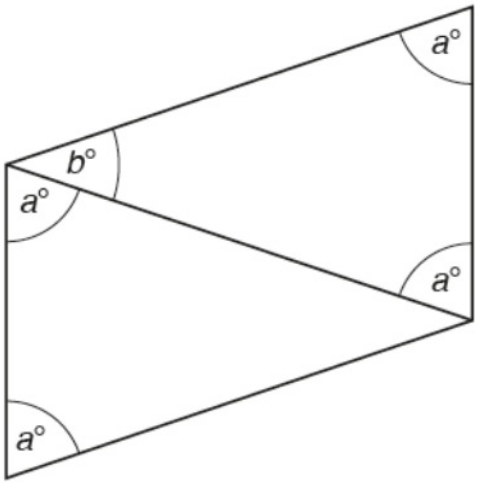
360
−258

258

(c) c = 102 ° **[2]**

Created by W Neill

19 Two congruent, isosceles triangles are joined, as shown, to form a parallelogram.
The largest angle of the **parallelogram** is 110°.



Not to scale

Write two equations.
Solve them to find the value of *a* and the value of *b*.

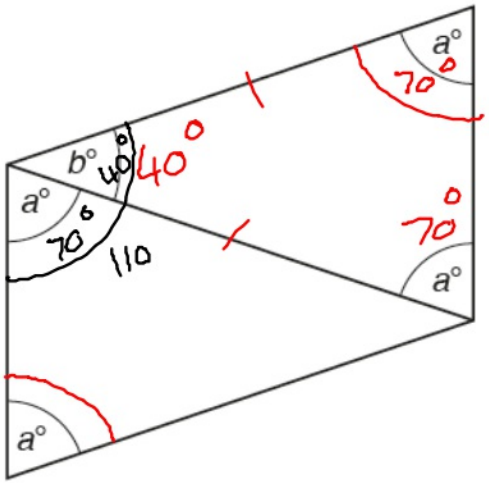
a = ...

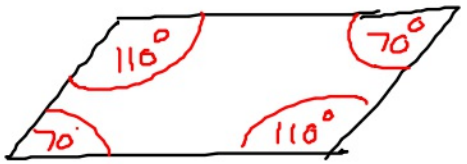
b = ... **[4]**

Created by W Neill

19 Two congruent, isosceles triangles are joined, as shown, to form a parallelogram.
The largest angle of the **parallelogram** is 110°.

$\triangle = 180^\circ$





Not to scale

Write two equations.
Solve them to find the value of *a* and the value of *b*.

a = 70° .....

b = 40° ✓ ..... **[4]**

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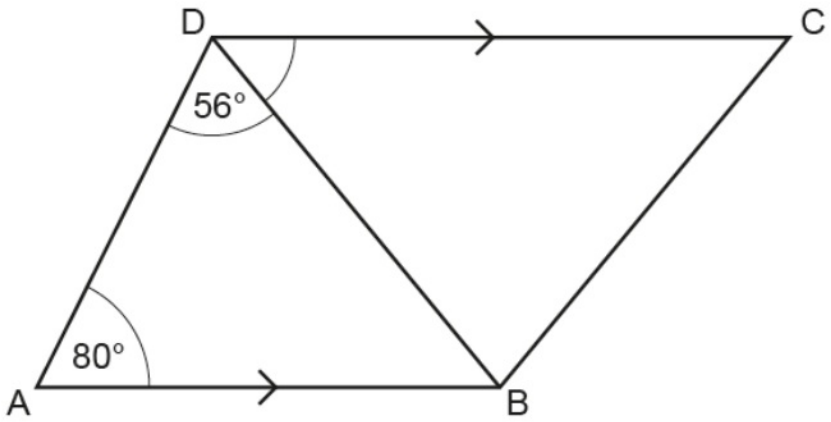
7 In the diagram, AB is parallel to DC.

G5/6/7



Not to scale

Work out angle BDC.
Give a reason for each angle you work out.

..... ° **[4]**

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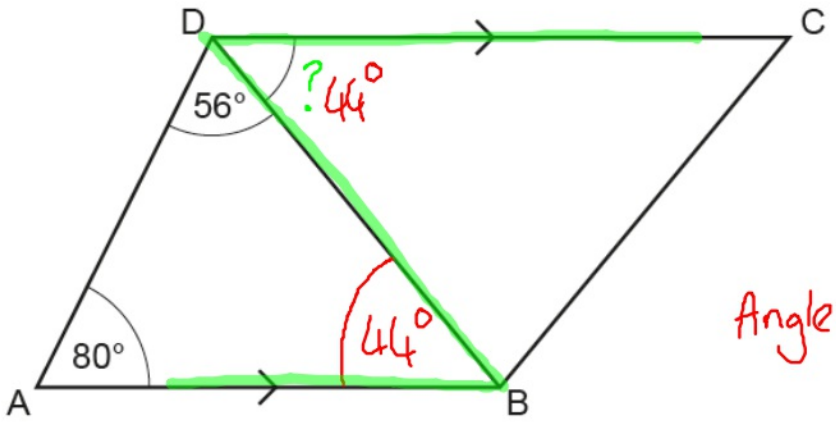
7 In the diagram, AB is parallel to DC.

GS/6/7



Not to scale

Work out angle BDC.
Give a reason for each angle you work out.

$180 - \begin{array}{r} 80 \\ +56 \\ \hline 136 \end{array} = 44^\circ$

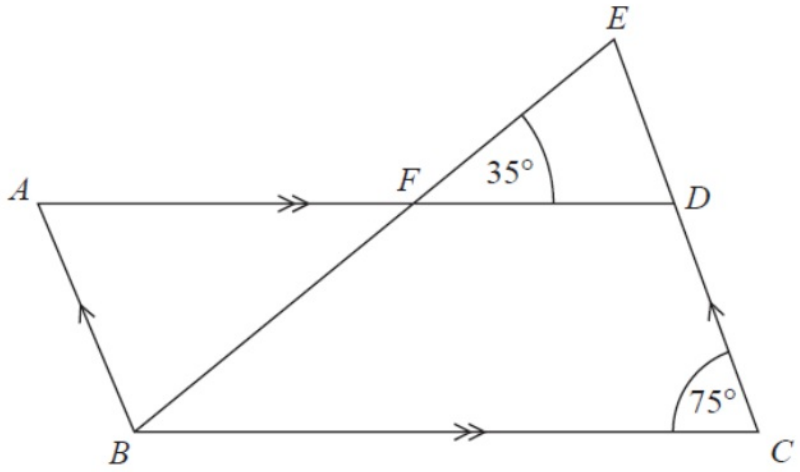
Angle ABD = 44° ... angles in a triangle add to 180°

Angle BDC = 44° as it is alternate (Z) with ABD

..... 44 ..... ° **[4]**

Edexcel

25



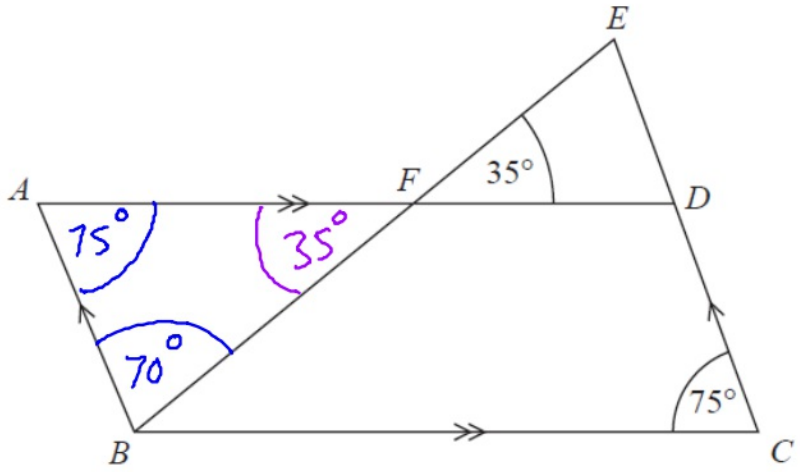
ABCD is a parallelogram.
EDC is a straight line.
F is the point on *AD* so that *BFE* is a straight line.

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)

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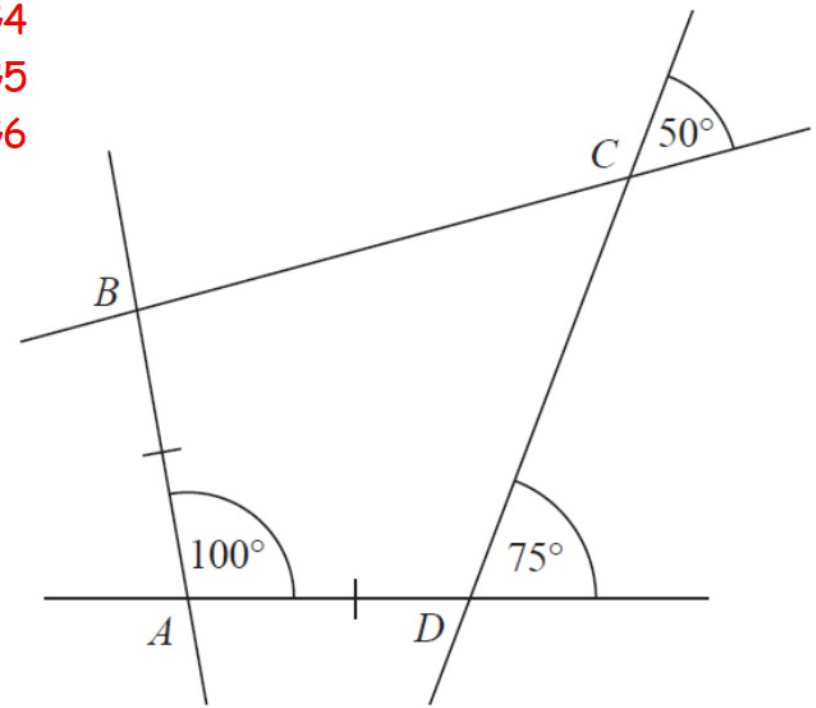
14 The diagram shows quadrilateral $ABCD$ with each of its sides extended.

G4
G5
G6



$AB = AD$

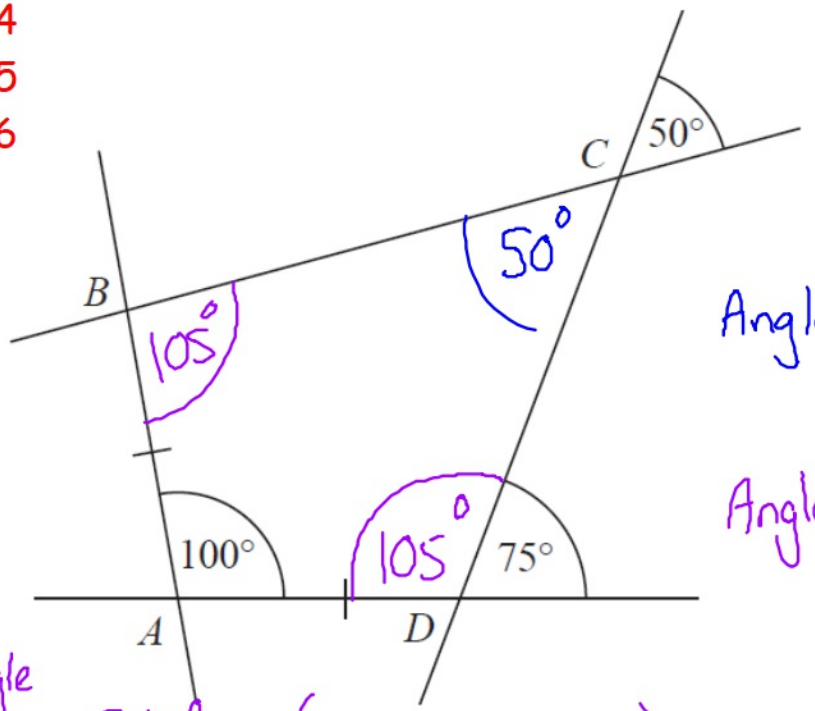
Show that $ABCD$ is a kite.
Give a reason for each stage of your working.

(Total for Question 14 is 4 marks)

Video Created by W Neill

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.

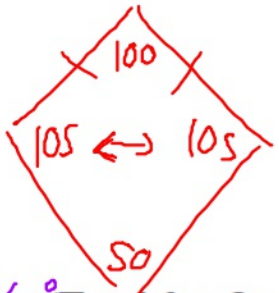
Angle BCD = 50°, because vertically opposite angles are equal.

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° ✓

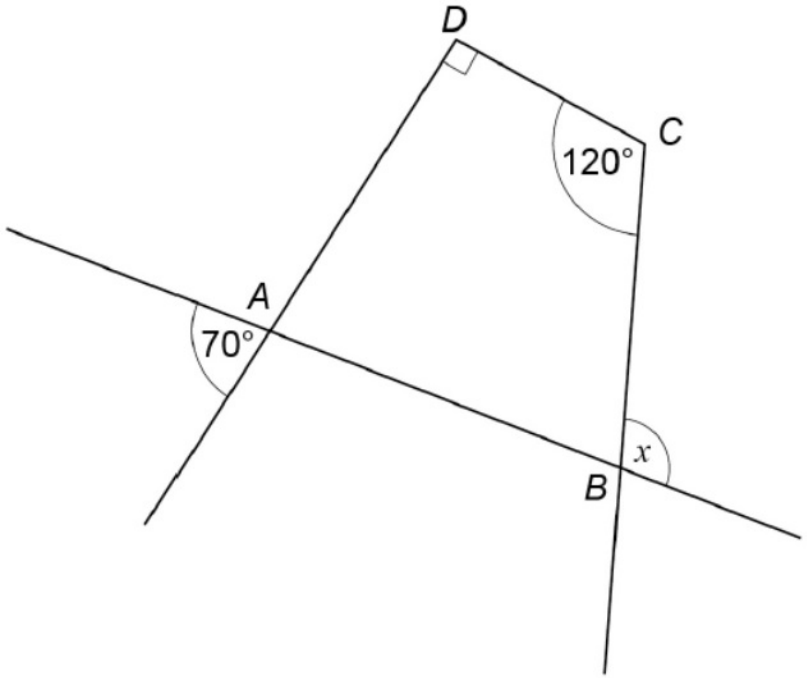
(Total for Question 14 is 4 marks)

AQA

Video created by W Neill

18 *ABCD* is a quadrilateral.

G4-5-6 Sides are extended as shown.



Not drawn accurately

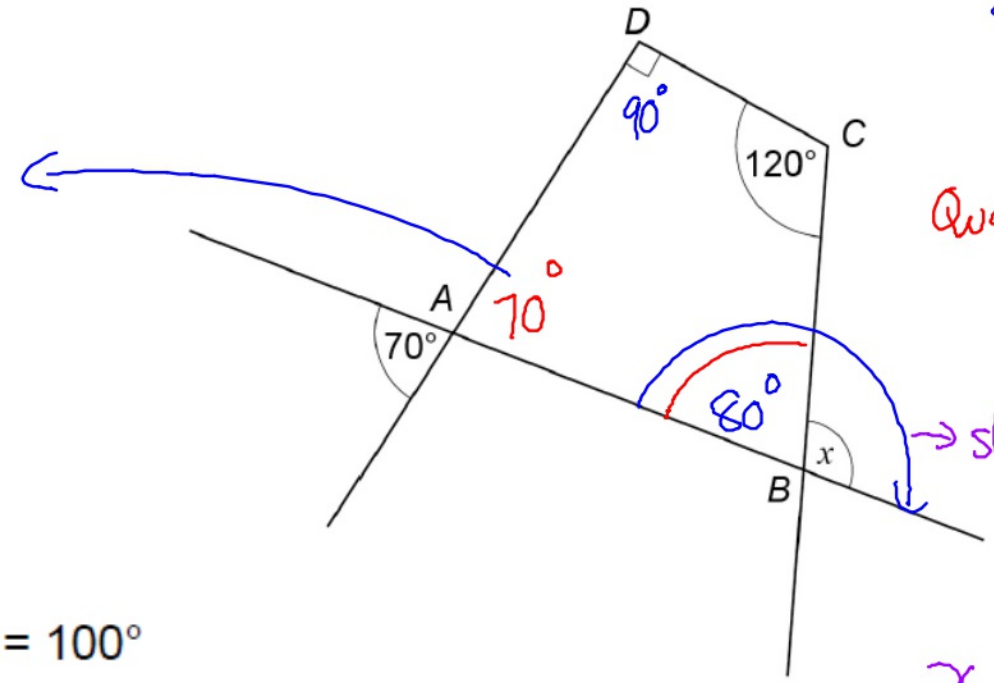
Show that $x = 100°$

[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 $x = 100°$

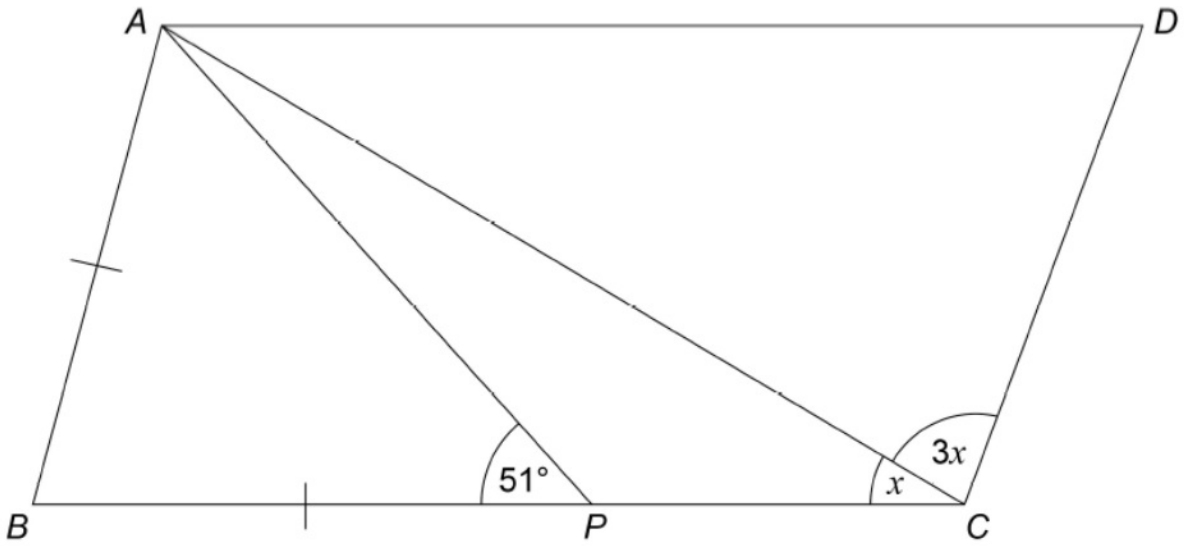
[3 marks]

22 *ABCD* is a parallelogram.

Video created by W Neill

AB = *BP*

A16
G5
G6



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

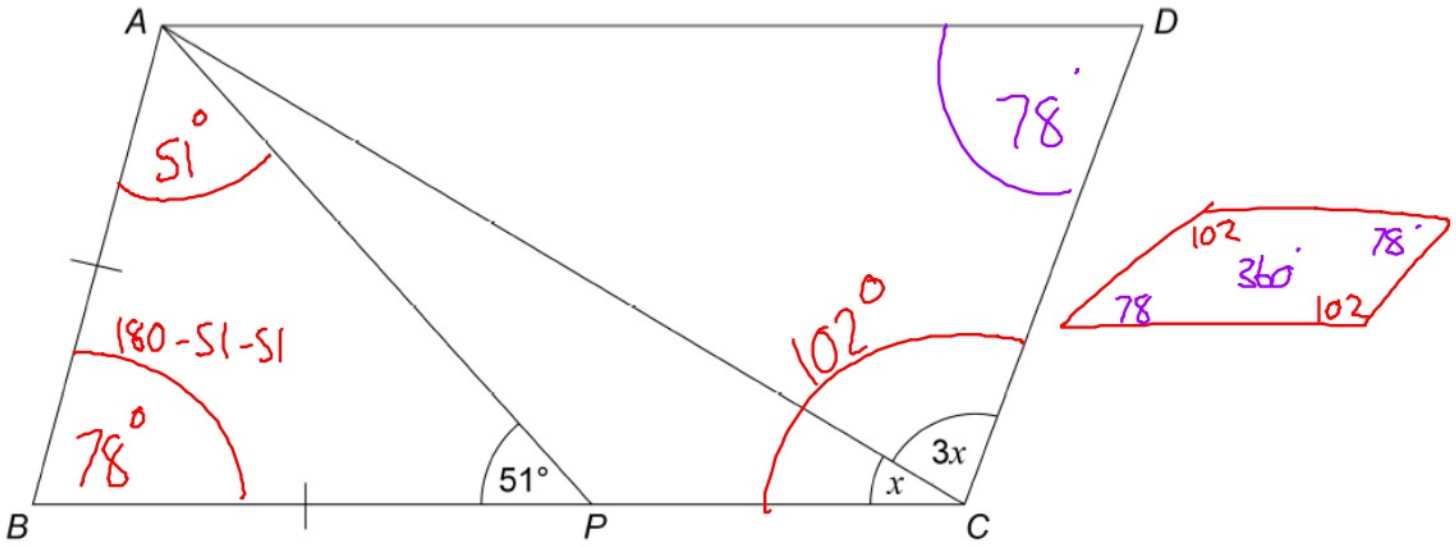
Answer _____ degrees

22 *ABCD* is a parallelogram.

Video created by W Neill

AB = *BP*

A16
G5
G6



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

$4x = 102^\circ$

$x = \frac{102^\circ}{4} =$

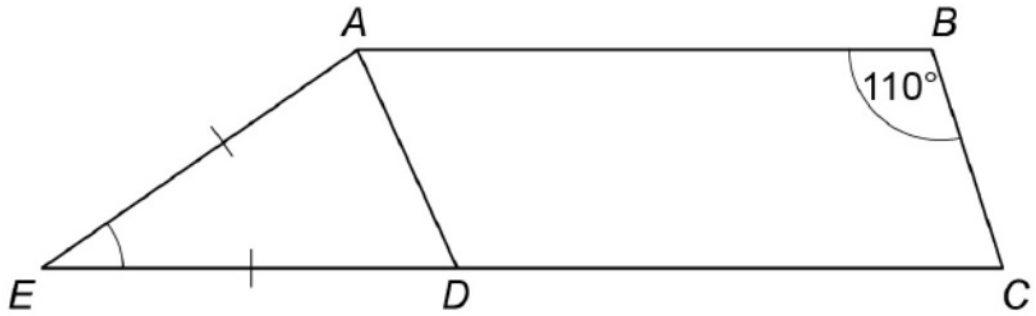
Answer 25.5° ✓ degrees

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]

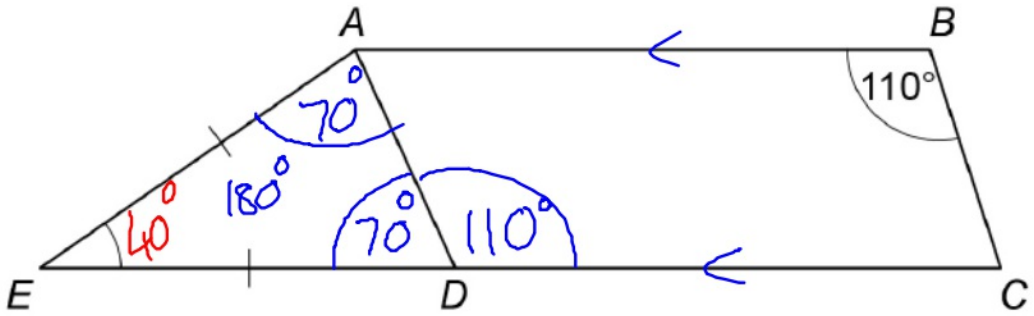
Answer _____ degrees

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