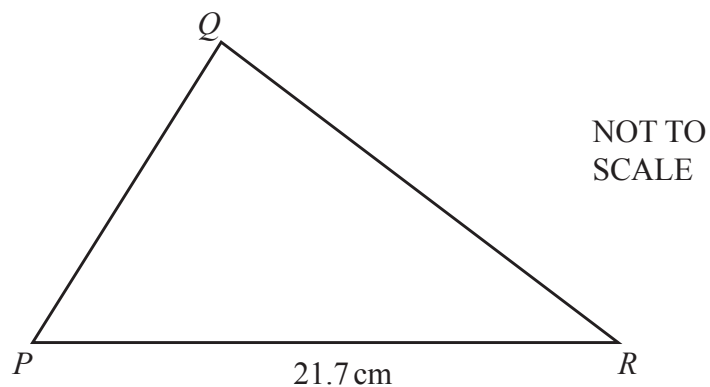
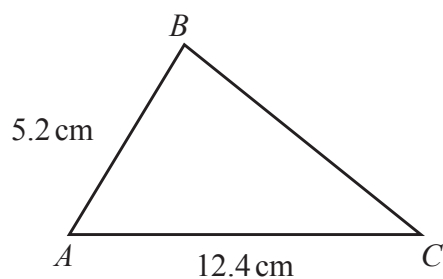


1. Question | 0580 Feb-March 2016 P2 V2 Q5

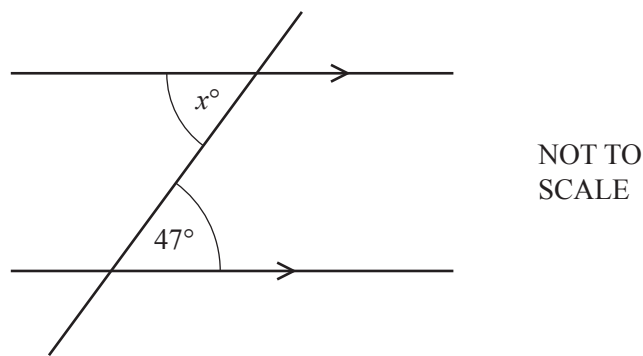
- 5 Triangle ABC is similar to triangle PQR .



Find PQ .

$PQ = \dots\dots\dots\text{ cm [2]}$

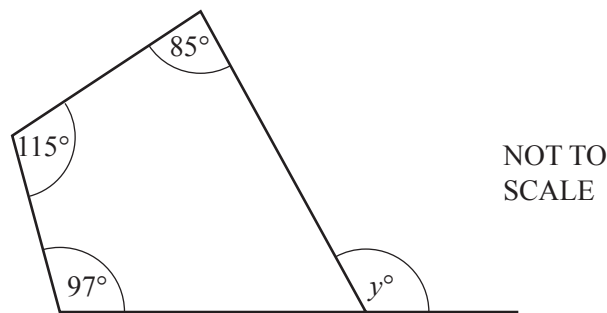
18 (a)



Find the value of x .

$x =$ [1]

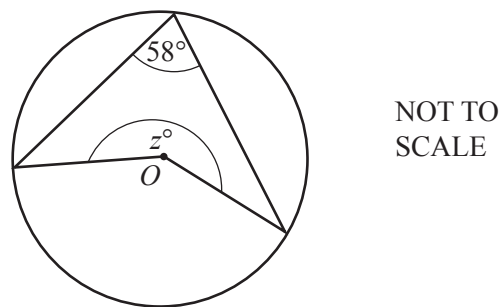
(b)



Find the value of y .

$y =$ [2]

(c)



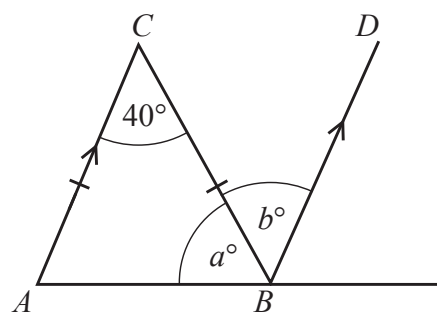
The diagram shows a circle, centre O .

Find the value of z .

$z =$ [2]

3. Question | 0580 May-June 2016 P2 V1 Q9

9

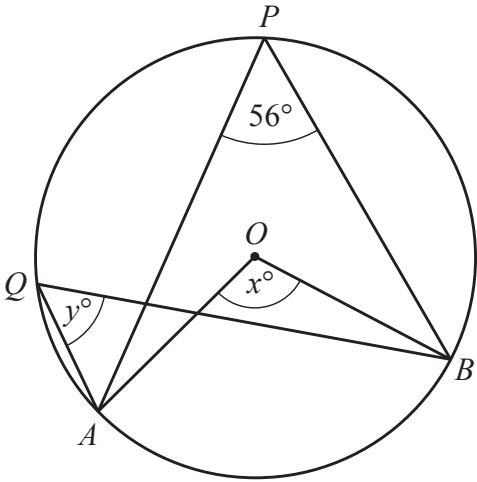
NOT TO
SCALE

Triangle ABC is isosceles and AC is parallel to BD .

Find the value of a and the value of b .

 $a = \dots\dots\dots$ $b = \dots\dots\dots [2]$

11



NOT TO
SCALE

A , B , P and Q lie on the circle, centre O .
Angle $APB = 56^\circ$.

Find the value of

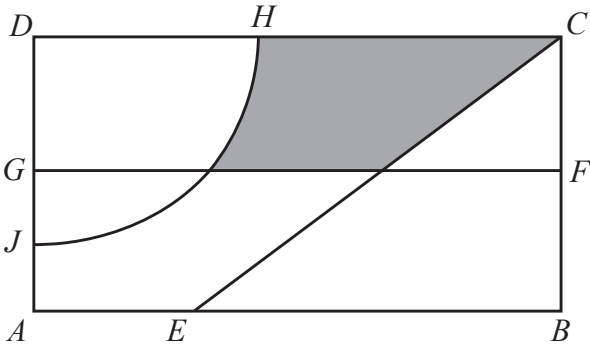
(a) x ,

$x = \dots\dots\dots [1]$

(b) y .

$y = \dots\dots\dots [1]$

14



The diagram shows a rectangular garden divided into different areas.
 FG is the perpendicular bisector of BC .
The arc HJ has centre D and radius 20 m.
 CE is the bisector of angle DCB .

Write down two more statements using loci to describe the shaded region inside the garden.

The shaded region is

- nearer to C than to B
-
- [2]

17 Five angles of a hexagon are each 115° .

Calculate the size of the sixth angle.

..... [3]

0580 Mathematics Paper 2 - Geometry

Topical questions | 183 questions

7. Question | 0580 May-June 2016 P2 V2 Q4

- 4** A quadrilateral has rotational symmetry of order 2 and no lines of symmetry.

Write down the mathematical name of this quadrilateral.

..... [1]

8. Question | 0580 May-June 2016 P2 V2 Q9

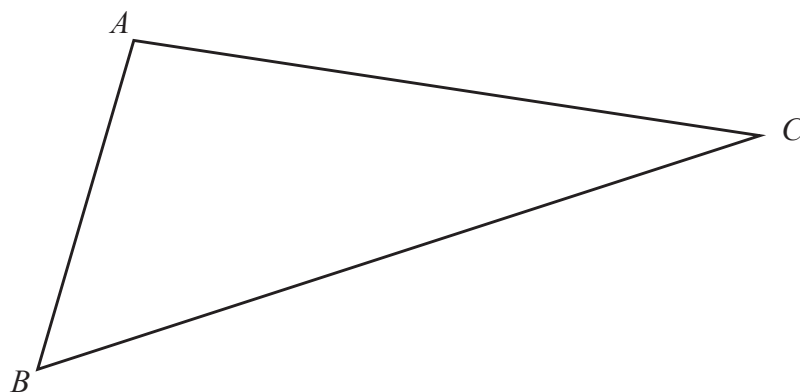
- 9** A regular polygon has an interior angle of 172° .

Find the number of sides of this polygon.

..... [3]

9. Question | 0580 May-June 2016 P2 V2 Q17

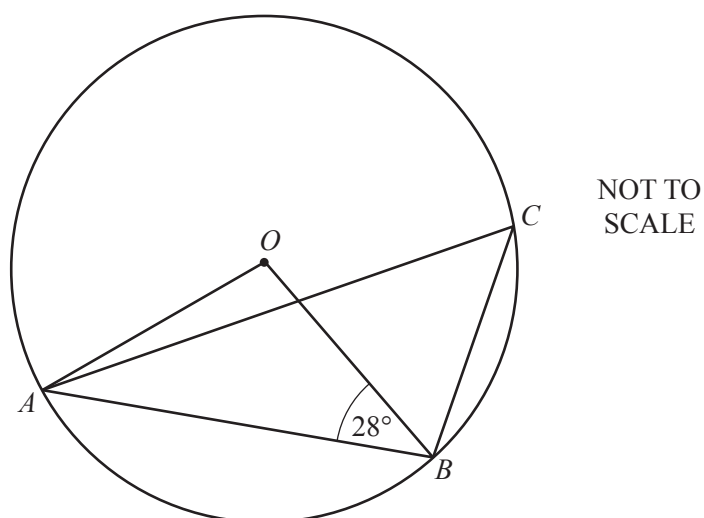
17 The diagram shows triangle ABC .



(a) Using a straight edge and compasses only, construct the bisector of angle ABC . [2]

(b) Draw the locus of points **inside** the triangle that are 3 cm from AC . [1]

21



In the diagram, A , B and C lie on the circumference of a circle, centre O .

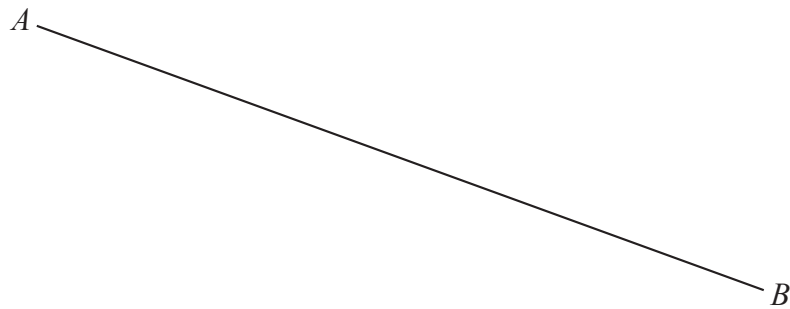
Work out the size of angle ACB .

Give a reason for each step of your working.

Angle $ACB = \dots\dots\dots$ [4]

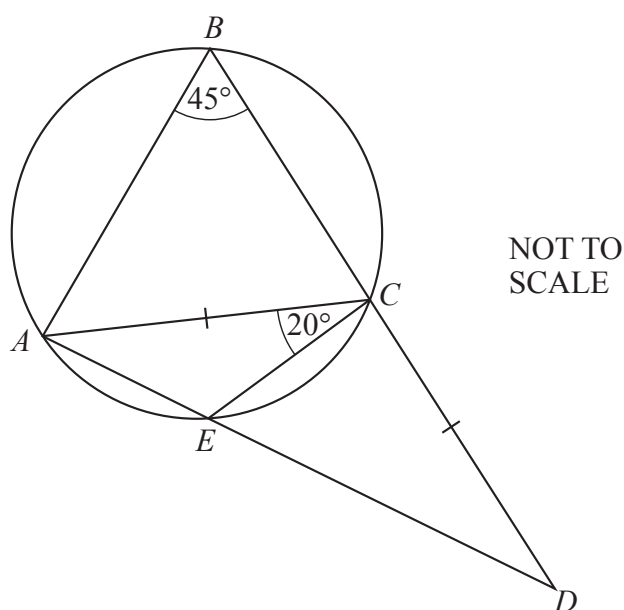
11. Question | 0580 May-June 2016 P2 V3 Q6

6 Using a straight edge and compasses only, construct the perpendicular bisector of the line AB .



[2]

12



$ABCE$ is a cyclic quadrilateral.

AED and BCD are straight lines.

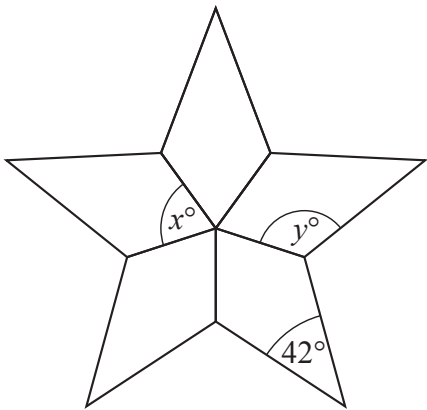
$AC = CD$, angle $ABC = 45^\circ$ and angle $ACE = 20^\circ$.

Work out angle ECD .

Angle $ECD = \dots\dots\dots$ [3]

13. Question | 0580 May-June 2016 P2 V3 Q13

13



NOT TO
SCALE

The diagram is made from 5 congruent kites.

Work out the value of

(a) x ,

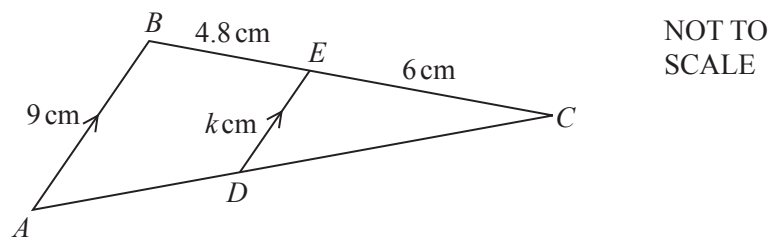
$x = \dots\dots\dots$ [1]

(b) y .

$y = \dots\dots\dots$ [2]

14. Question | 0580 May-June 2016 P2 V3 Q21

21 (a)

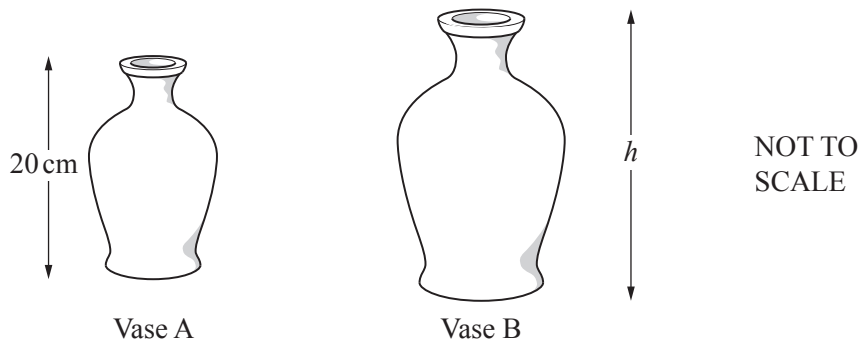


Triangles CBA and CED are similar.
 AB is parallel to DE .
 $AB = 9\text{ cm}$, $BE = 4.8\text{ cm}$, $EC = 6\text{ cm}$ and $ED = k\text{ cm}$.

Work out the value of k .

$k = \dots\dots\dots$ [2]

(b)

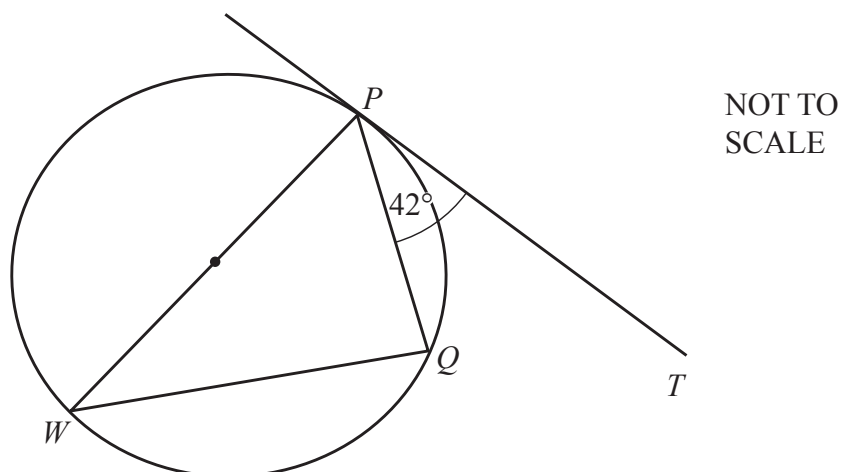


The diagram shows two mathematically similar vases.
Vase A has height 20 cm and volume 1500 cm^3 .
Vase B has volume 2592 cm^3 .

Calculate h , the height of vase B.

$h = \dots\dots\dots\text{ cm}$ [3]

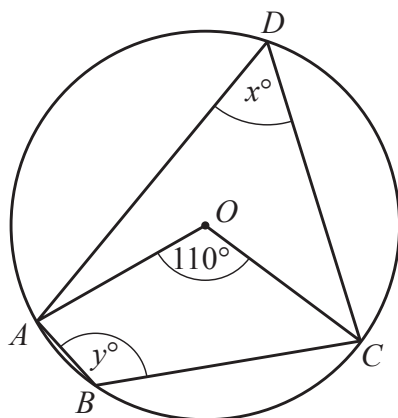
6



In the diagram, PT is a tangent to the circle at P .
 PW is a diameter and angle $TPQ = 42^\circ$.

Find angle PWQ .

Angle $PWQ = \dots\dots\dots [2]$

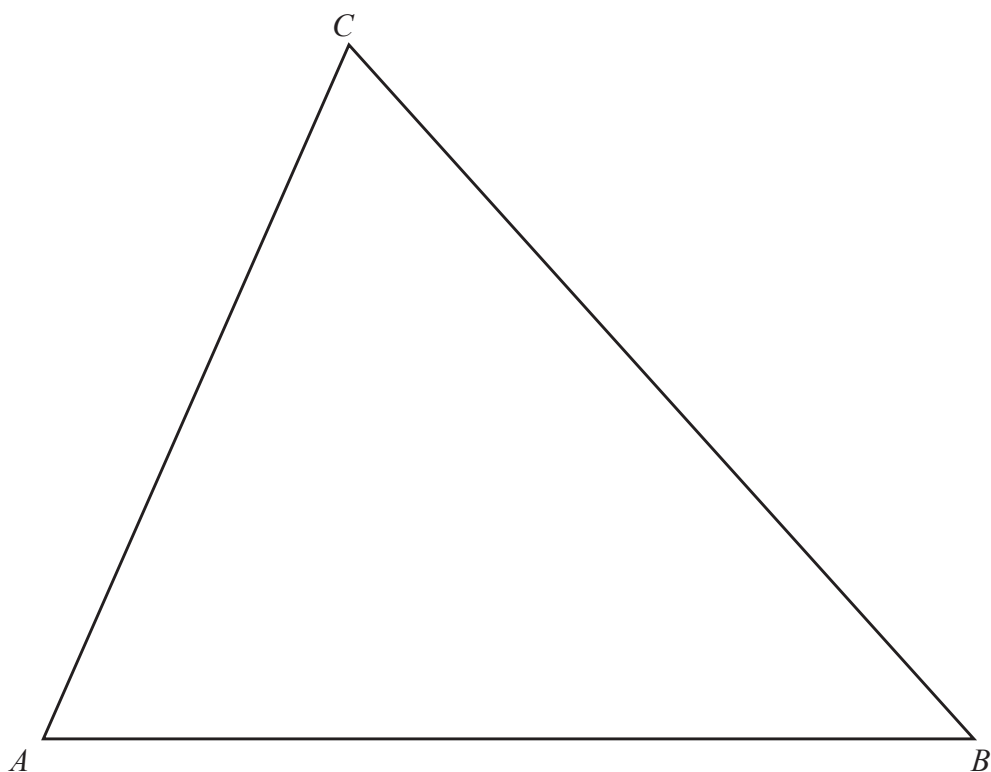
9NOT TO
SCALE

A , B , C and D lie on the circle, centre O .

Find the value of x and the value of y .

 $x = \dots\dots\dots$ $y = \dots\dots\dots [2]$

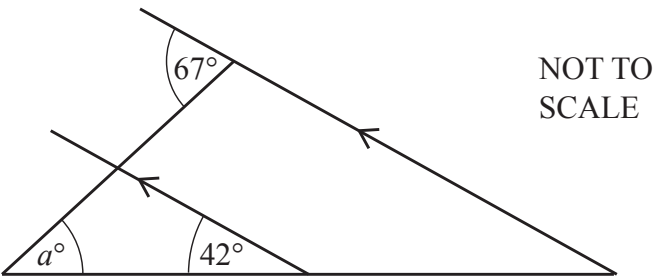
17



- (a) Construct the locus of points, inside the triangle, that are 5 cm from B . [1]
- (b) Construct the locus of points, inside the triangle, that are equidistant from AB and BC . [2]
- (c) Shade the region, inside the triangle, containing points that are
- more than 5 cm from B
 - and
 - nearer to AB than to BC . [1]

18. Question | 0580 Oct-Nov 2016 P2 V2 Q2

2

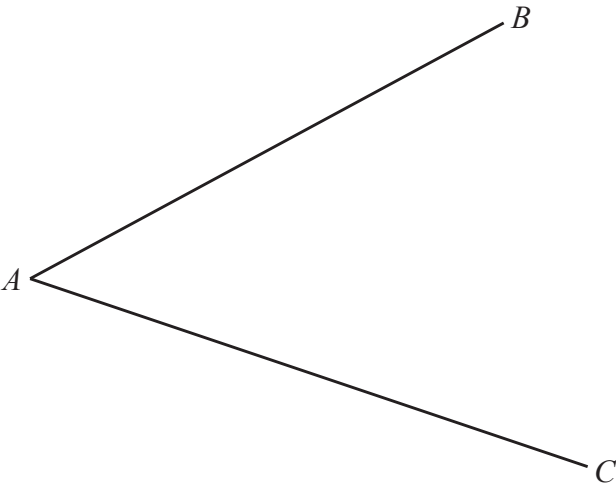


Find the value of a .

$a = \dots\dots\dots$ [2]

19. Question | 0580 Oct-Nov 2016 P2 V2 Q11

11

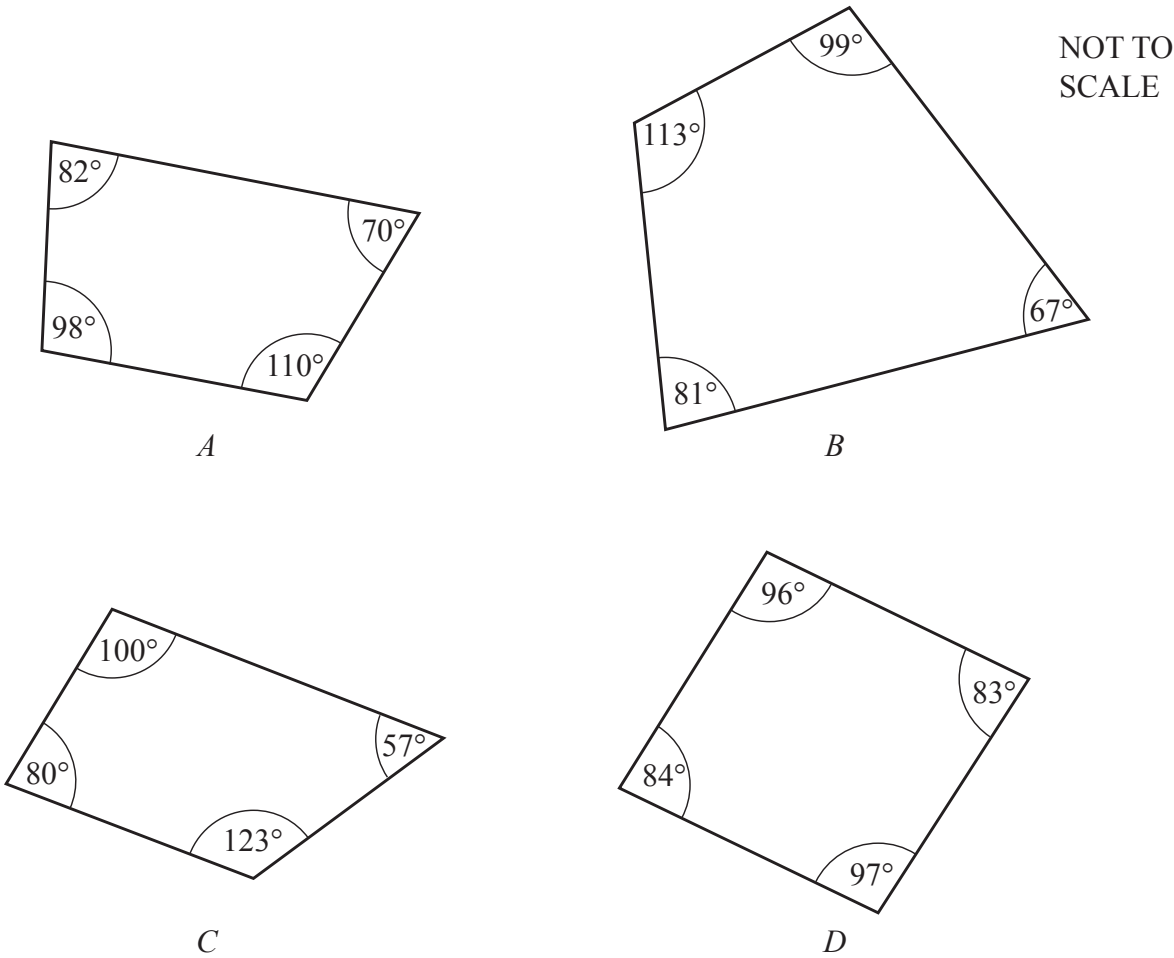


(a) Using compasses and a straight edge only, construct the bisector of angle BAC . [2]

(b) Complete the statement.

The bisector of angle BAC is the locus of points that are
..... [1]

3

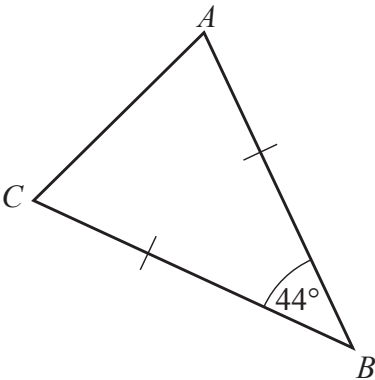


The diagram shows four quadrilaterals A , B , C and D .

Which one of these could be a cyclic quadrilateral?

.....[1]

15 (a)



NOT TO
SCALE

Triangle ABC is an isosceles triangle with $AB = CB$.
Angle $ABC = 44^\circ$.

Find angle ACB .

Angle $ACB =$ [1]

- (b) A regular polygon has an exterior angle of 40° .
Work out the number of sides of this polygon.

..... [2]

22. Question | 0580 Feb-March 2017 P2 V2 Q2

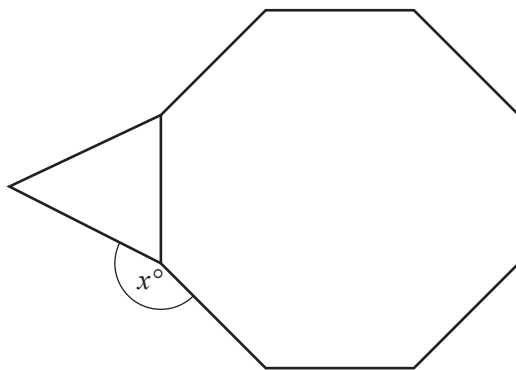
2 The line AB is one side of an equilateral triangle ABC .

Using a straight edge and compasses only, construct triangle ABC .



[2]

- 14** The diagram shows a regular octagon joined to an equilateral triangle.

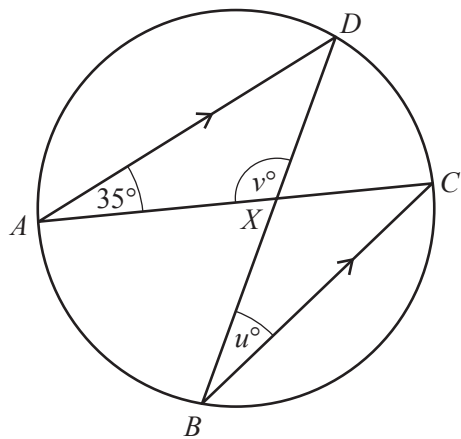


NOT TO
SCALE

Work out the value of x .

$x =$ [3]

21 (a)



NOT TO
SCALE

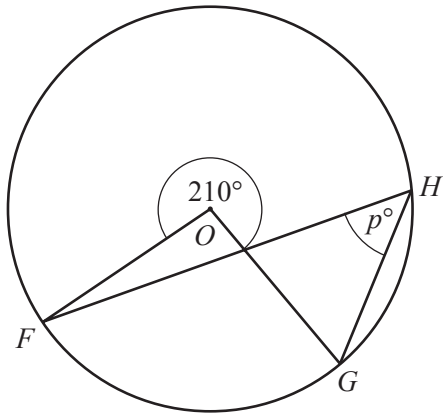
A, B, C and D are points on the circle.
 AD is parallel to BC .
The chords AC and BD intersect at X .

Find the value of u and the value of v .

$u = \dots\dots\dots$

$v = \dots\dots\dots [3]$

(b)



NOT TO
SCALE

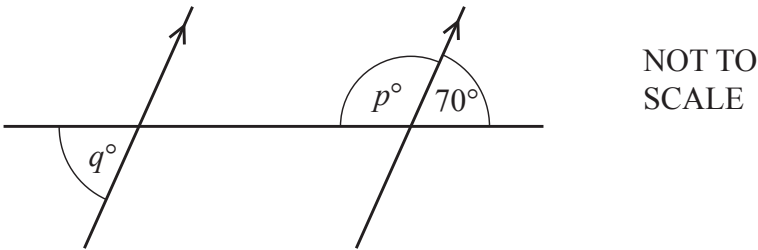
F, G and H are points on the circle, centre O .

Find the value of p .

$p = \dots\dots\dots [2]$

25. Question | 0580 May-June 2017 P2 V2 Q8

8



The diagram shows a straight line intersecting two parallel lines.

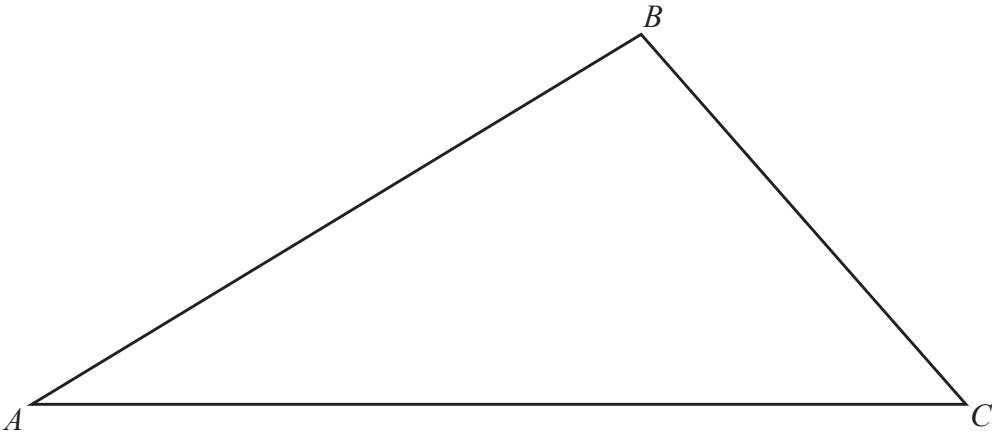
Find the value of p and the value of q .

$p = \dots\dots\dots$

$q = \dots\dots\dots [2]$

26. Question | 0580 May-June 2017 P2 V2 Q16

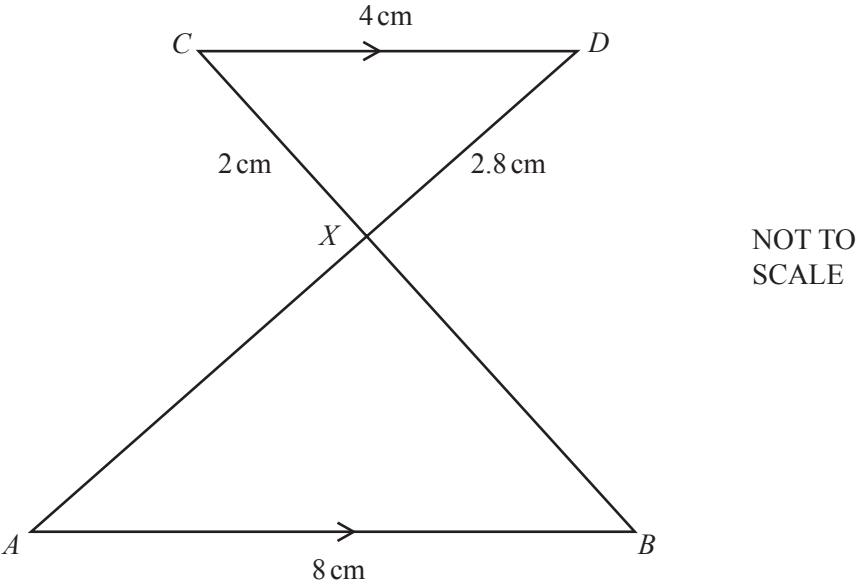
16



(a) Using a straight edge and compasses only, construct the bisector of angle BAC . [2]

(b) Shade the region inside the triangle that is nearer to AC than to AB . [1]

24



In the diagram, AB and CD are parallel.
 AD and BC intersect at X .
 $AB = 8\text{ cm}$, $CD = 4\text{ cm}$, $CX = 2\text{ cm}$ and $DX = 2.8\text{ cm}$.

(a) Complete this mathematical statement.

Triangle ABX is to triangle DCX . [1]

(b) Calculate AX .

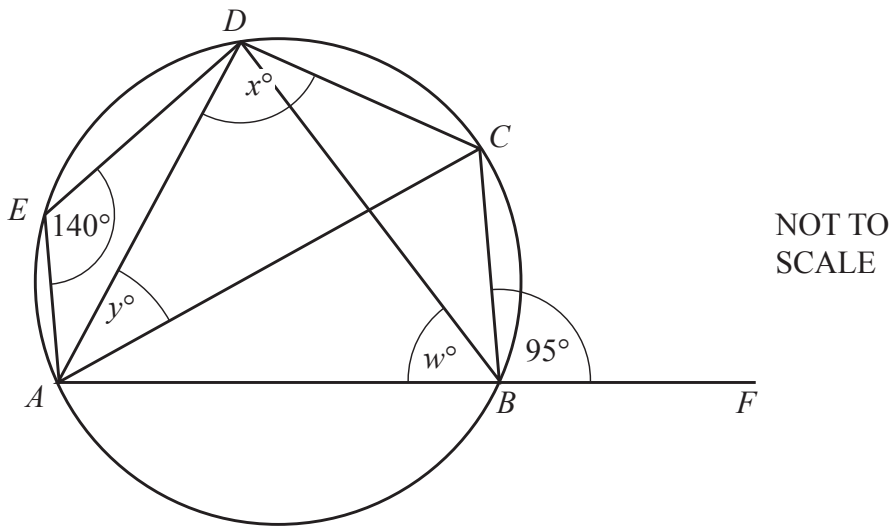
$AX = \dots\dots\dots\text{ cm}$ [2]

(c) The area of triangle ABX is $y\text{ cm}^2$.

Find the area of triangle DCX in terms of y .

$\dots\dots\dots\text{ cm}^2$ [1]

26



A, B, C, D and E lie on the circle.
 AB is extended to F .
Angle $AED = 140^\circ$ and angle $CBF = 95^\circ$.

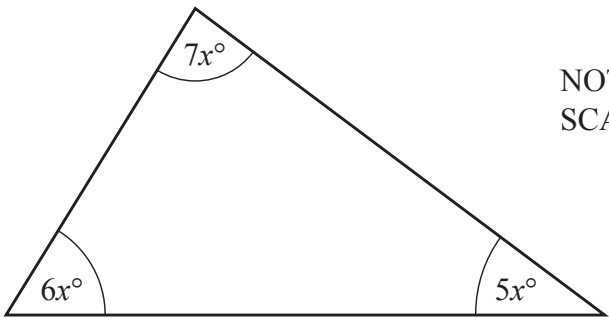
Find the values of w, x and y .

$w =$
 $x =$
 $y =$ [5]

Question 27 is printed on the next page.

29. Question | 0580 May-June 2017 P2 V3 Q10

10 The three angles in a triangle are $5x^\circ$, $6x^\circ$ and $7x^\circ$.



NOT TO
SCALE

(a) Find the value of x .

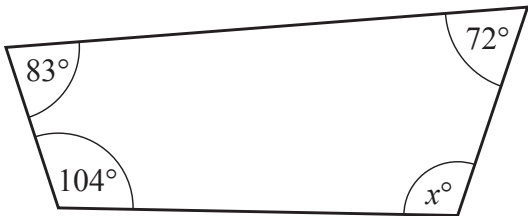
$x = \dots\dots\dots$ [2]

(b) Work out the size of the largest angle in the triangle.

$\dots\dots\dots$ [1]

30. Question | 0580 Oct-Nov 2017 P2 V1 Q1

1



NOT TO
SCALE

The diagram shows a quadrilateral.

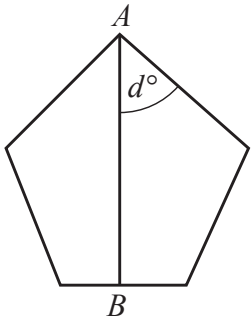
Find the value of x .

$x = \dots\dots\dots$ [1]

31. Question | 0580 Oct-Nov 2017 P2 V1 Q11

- 11 The diagram shows a regular pentagon.
 AB is a line of symmetry.

Work out the value of d .

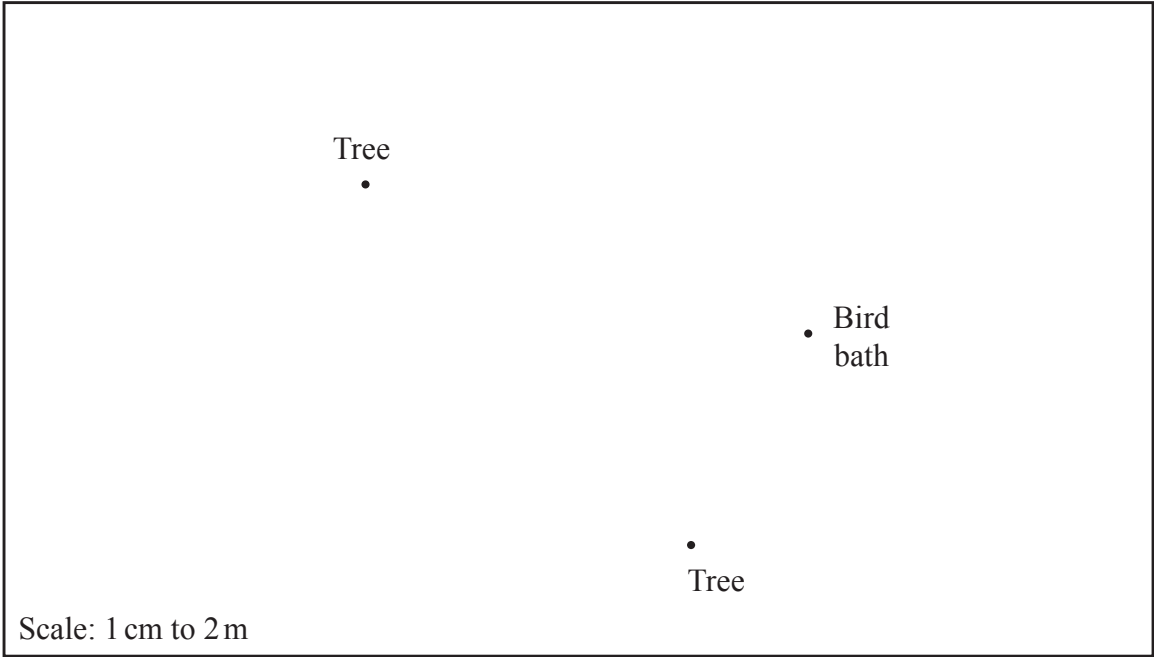


NOT TO
SCALE

$d = \dots\dots\dots [3]$

32. Question | 0580 Oct-Nov 2017 P2 V1 Q18

- 18 The diagram shows a scale drawing of Tariq’s garden.
The scale is 1 centimetre represents 2 metres.



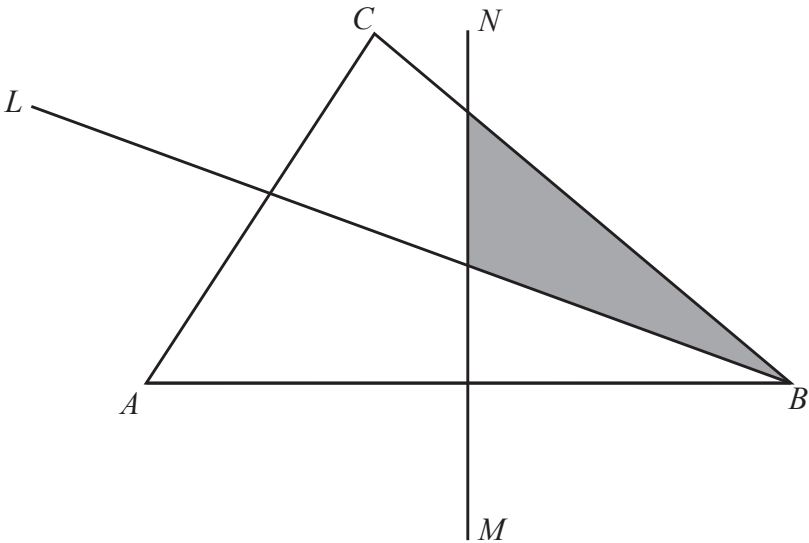
Tariq puts a statue in the garden.
The statue is equidistant from the two trees and 10 m from the bird bath.

Find, by construction, the point where Tariq puts the statue.
Label the point S .

[4]

33. Question | 0580 Oct-Nov 2017 P2 V2 Q3

3



In the diagram, BL is the bisector of angle ABC and MN is the perpendicular bisector of AB .

Complete the statement.

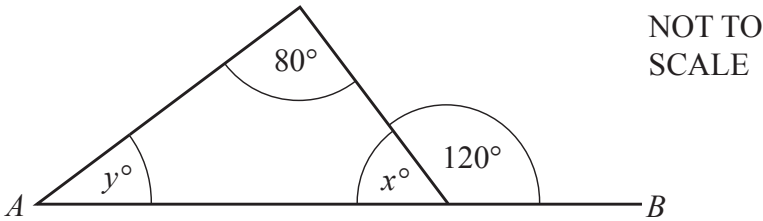
The shaded region contains the points, inside triangle ABC , that are

- nearer to B than to A
- and
- nearer to than to

[1]

34. Question | 0580 Oct-Nov 2017 P2 V2 Q5

5



In the diagram, AB is a straight line.

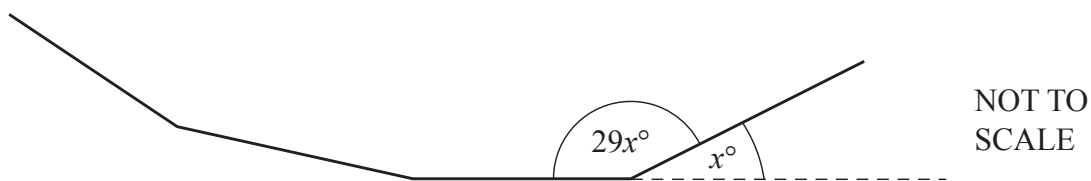
Find the value of x and the value of y .

$x =$

$y =$ [2]

35. Question | 0580 Oct-Nov 2017 P2 V2 Q17

17



The diagram shows part of a regular polygon.

The exterior angle is x° .

The interior angle is $29x^\circ$.

Work out the number of sides of this polygon.

..... [3]

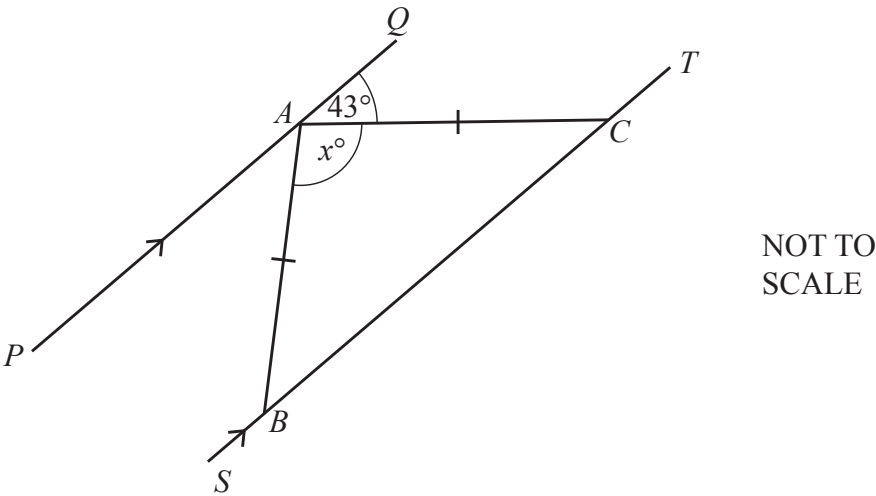


Calculate the values of w , x and y .

$y = \dots\dots\dots [3]$

37. Question | 0580 May-June 2018 P2 V1 Q5

5



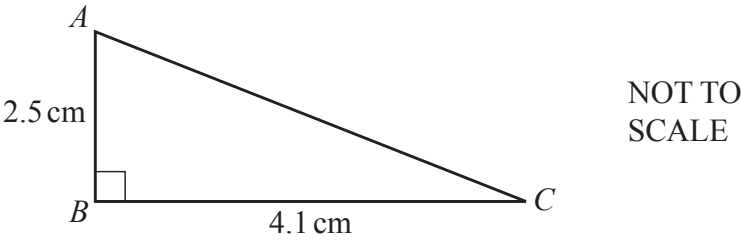
The diagram shows two parallel lines PAQ and $SBCT$.
 $AB = AC$ and angle $QAC = 43^\circ$.

Find the value of x .

$x = \dots\dots\dots [2]$

38. Question | 0580 May-June 2018 P2 V1 Q7

7



Calculate the length of AC .

$AC = \dots\dots\dots \text{ cm } [2]$

39. Question | 0580 May-June 2018 P2 V2 Q7

- 7
- A and B are two towns on a map.
The bearing of A from B is 140° .

Work out the bearing of B from A .

..... [2]

40. Question | 0580 May-June 2018 P2 V2 Q9

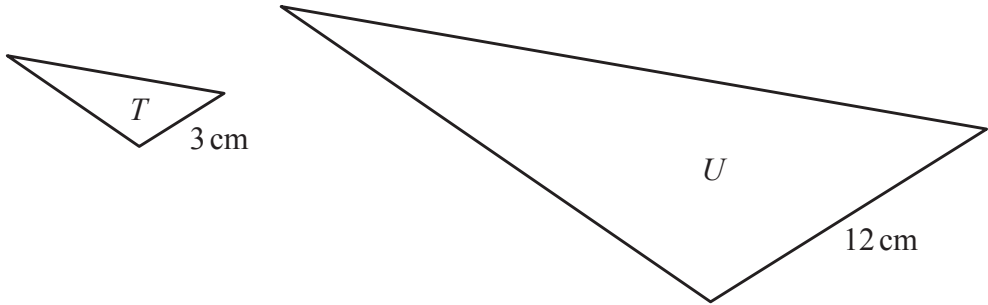
- 9
- Using a straight edge and compasses only**, construct the locus of points that are equidistant from A and B .

A •

• B

[2]

11



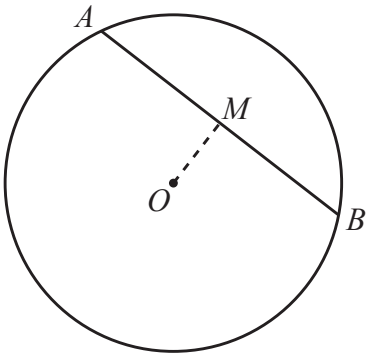
NOT TO
SCALE

The diagram shows two mathematically similar triangles, T and U .
Two corresponding side lengths are 3 cm and 12 cm.
The area of triangle T is 5 cm^2 .

Find the area of triangle U .

..... cm^2 [2]

16



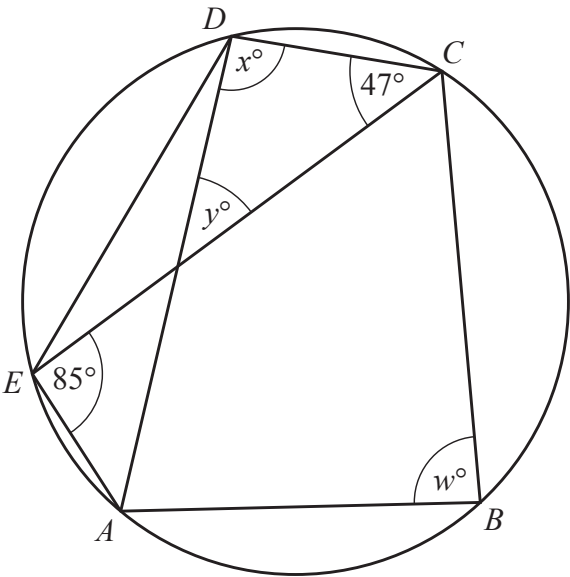
NOT TO
SCALE

The diagram shows a circle, centre O .
 AB is a chord of length 12 cm.
 M is the mid-point of AB and $OM = 4.5$ cm.

Calculate the radius of the circle.

..... cm [3]

20



NOT TO
SCALE

The points A , B , C , D and E lie on the circumference of the circle.
Angle $DCE = 47^\circ$ and angle $CEA = 85^\circ$.

Find the values of w , x and y .

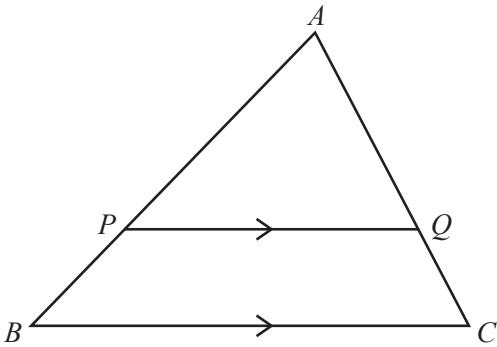
$w =$

$x =$

$y =$ [3]

44. Question | 0580 May-June 2018 P2 V3 Q25

25 (a)



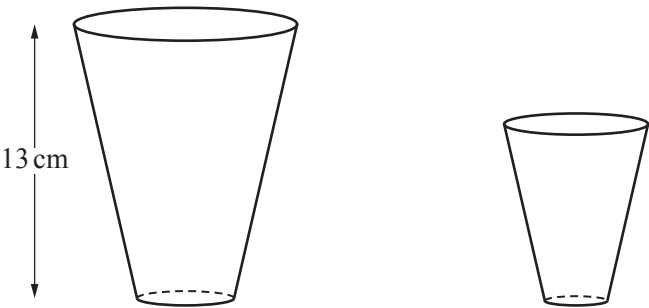
NOT TO
SCALE

In the diagram, PQ is parallel to BC .
 APB and AQC are straight lines.
 $PQ = 8\text{ cm}$, $BC = 10\text{ cm}$ and $AB = 9\text{ cm}$.

Calculate PB .

$PB = \dots\dots\dots\text{ cm}$ [2]

(b)



NOT TO
SCALE

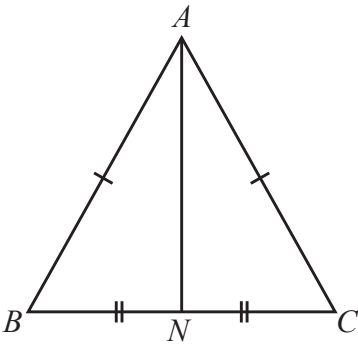
The diagram shows two glasses which are mathematically similar.
The larger glass has a capacity of 0.5 litres and the smaller glass has a capacity of 0.25 litres.
The height of the larger glass is 13 cm.

Calculate the height of the smaller glass.

$\dots\dots\dots\text{ cm}$ [3]

45. Question | 0580 Oct-Nov 2018 P2 V1 Q2

2



NOT TO
SCALE

In the diagram, $AB = AC$ and $BN = NC$.

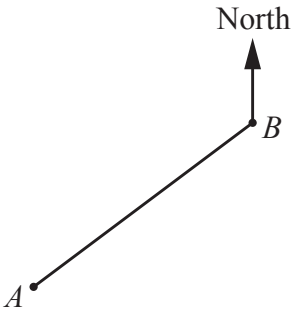
Complete the statement using a mathematical term.

Triangle ABN is to triangle ACN .

[1]

46. Question | 0580 Oct-Nov 2018 P2 V1 Q6

6



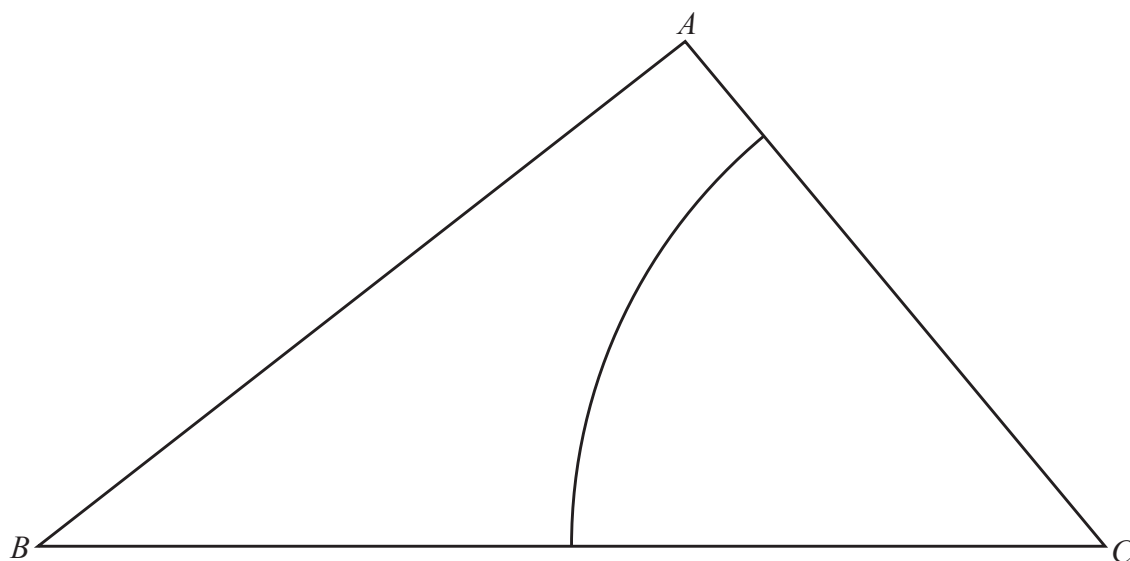
NOT TO
SCALE

The bearing of A from B is 227° .

Find the bearing of B from A .

..... [2]

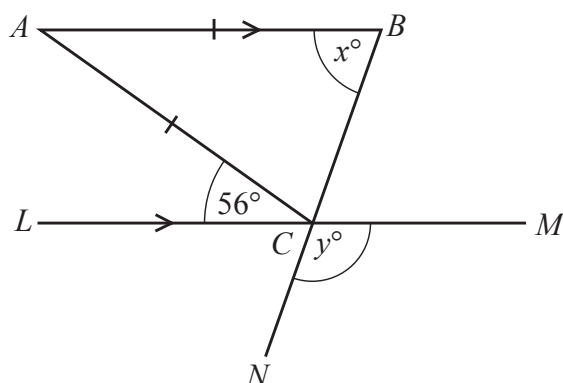
13



The diagram shows a triangle ABC and an arc with centre C and radius 6.5 cm.

- (a) **Using a straight edge and compasses only**, construct the locus of points inside the triangle that are equidistant from BA and BC . [2]
- (b) Shade the region inside the triangle that is
- more than 6.5 cm from C
 - and
 - nearer to BA than to BC .
- [1]

16

NOT TO
SCALE

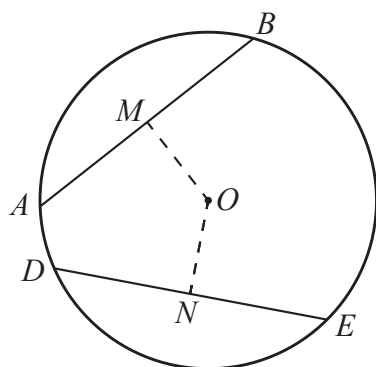
The diagram shows an isosceles triangle ABC with $AB = AC$.
 LCM and BCN are straight lines and LCM is parallel to AB .
 Angle $ACL = 56^\circ$.

Find the value of x and the value of y .

$x =$

$y =$ [4]

2

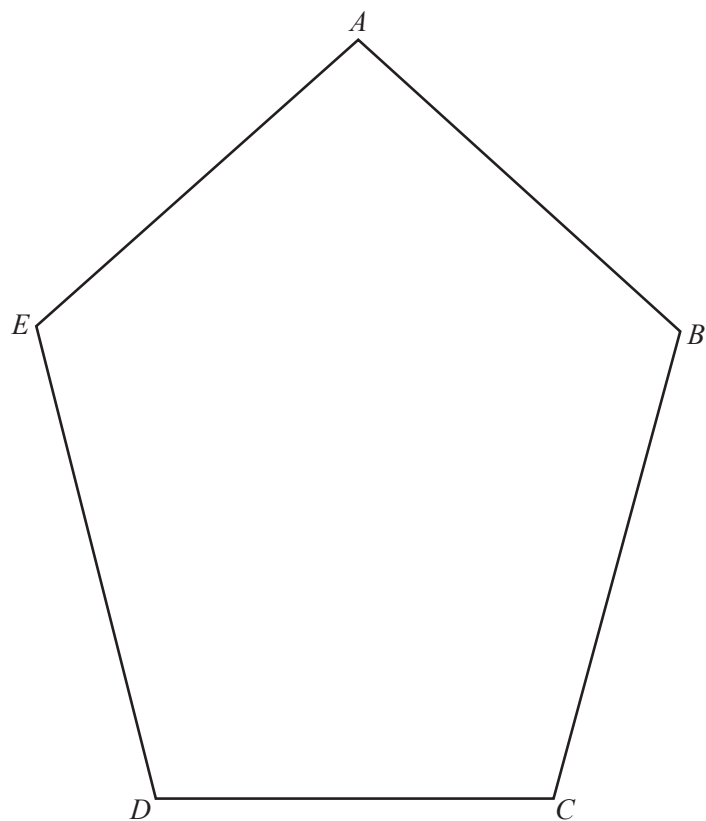
NOT TO
SCALE

The diagram shows a circle, centre O .
 AB and DE are chords of the circle.
 M is the mid-point of AB and N is the mid-point of DE .
 $AB = DE = 9\text{ cm}$ and $OM = 5\text{ cm}$.

Find ON .

$ON = \dots\dots\dots\text{ cm [1]}$

- 19** The diagram shows a pentagon $ABCDE$.



- (a) Using a straight edge and compasses only, construct the bisector of angle BCD . [2]
- (b) Draw the locus of the points inside the pentagon that are 3 cm from E . [1]
- (c) Shade the region inside the pentagon that is
- less than 3 cm from E
 - and
 - nearer to DC than to BC .

[1]

51. Question | 0580 Feb-March 2019 P2 V2 Q7

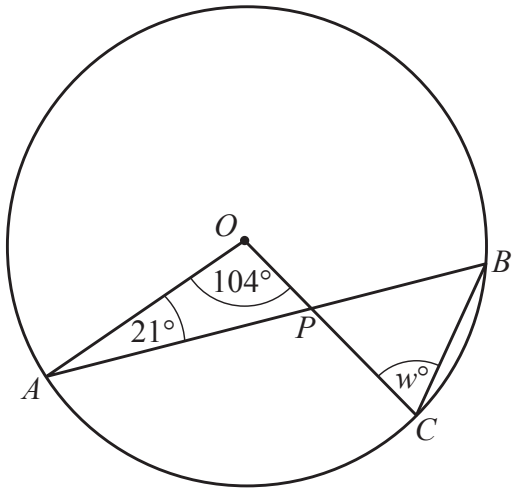
7 The bearing of Alexandria from Paris is 128° .

Calculate the bearing of Paris from Alexandria.

..... [2]

52. Question | 0580 Feb-March 2019 P2 V2 Q15

15



NOT TO
SCALE

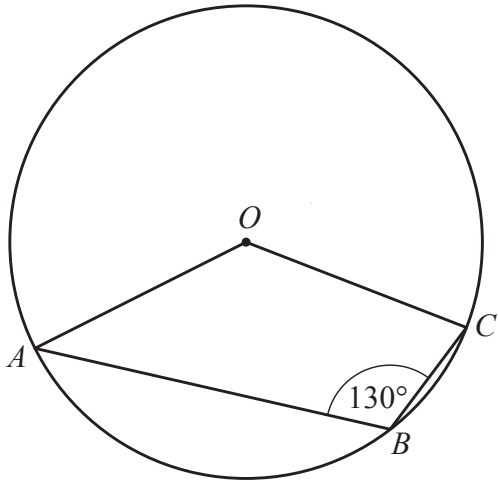
A , B and C are points on the circle, centre O .
 AB and OC intersect at P .

Find the value of w .

$w =$ [3]

53. Question | 0580 May-June 2019 P2 V1 Q8

8



NOT TO
SCALE

A , B and C are points on the circle, centre O .

Find the obtuse angle AOC .

Angle AOC = ... [2]

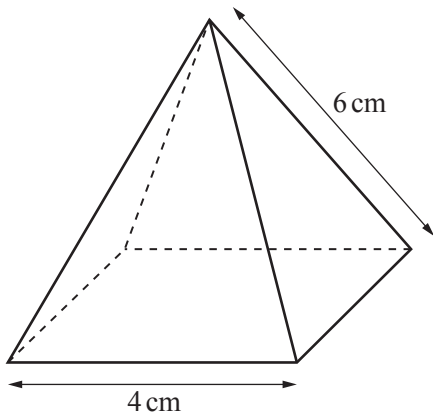
54. Question | 0580 May-June 2019 P2 V2 Q4

4 Complete each statement.

(a) A quadrilateral with only one pair of parallel sides is called a [1]

(b) An angle greater than 90° but less than 180° is called [1]

13



NOT TO
SCALE

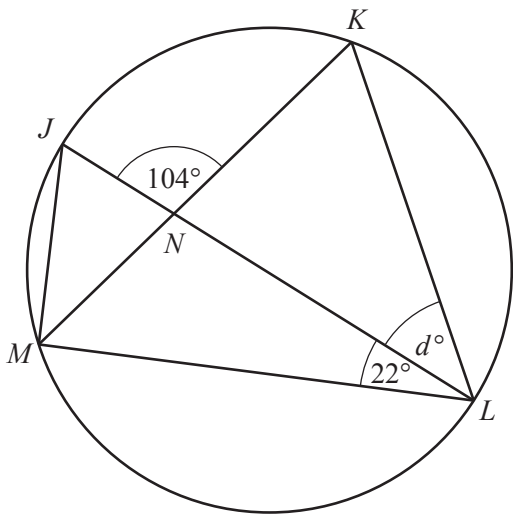
The diagram shows a pyramid with a square base.
The triangular faces are congruent isosceles triangles.

(a) Write down the number of planes of symmetry of this pyramid.

..... [1]

(b) **Using a ruler and compasses only**, construct an accurate drawing of one of the triangular faces of the pyramid.

19



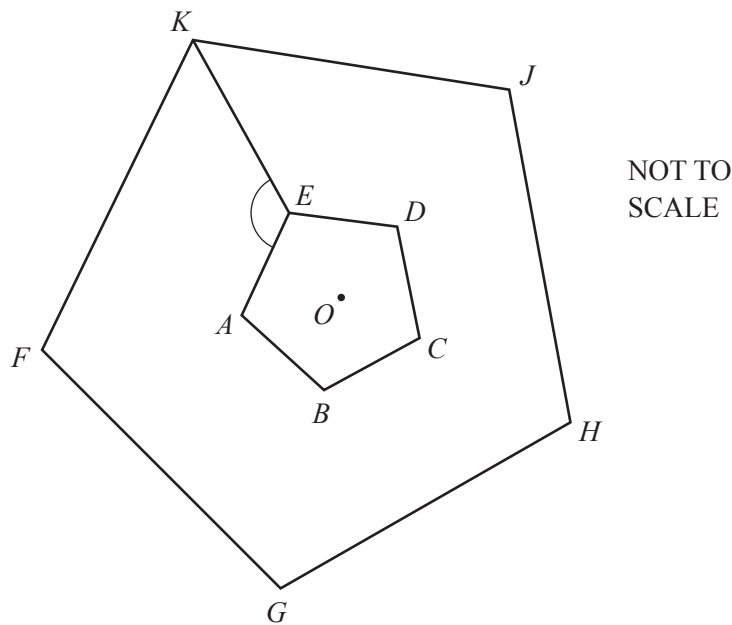
NOT TO
SCALE

J, K, L and M are points on the circumference of a circle with diameter JL .
 JL and KM intersect at N .
Angle $JNK = 104^\circ$ and angle $MLJ = 22^\circ$.

Work out the value of d .

$d = \dots\dots\dots$ [4]

25



The diagram shows two regular pentagons.
Pentagon $FGHIK$ is an enlargement of pentagon $ABCDE$, centre O .

(a) Find angle AEK .

Angle $AEK = \dots\dots\dots$ [4]

(b) The area of pentagon $FGHIK$ is 73.5 cm^2 .
The area of pentagon $ABCDE$ is 6 cm^2 .

Find the ratio perimeter of pentagon $FGHIK$: perimeter of pentagon $ABCDE$ in its simplest form.

$\dots\dots\dots$: $\dots\dots\dots$ [2]

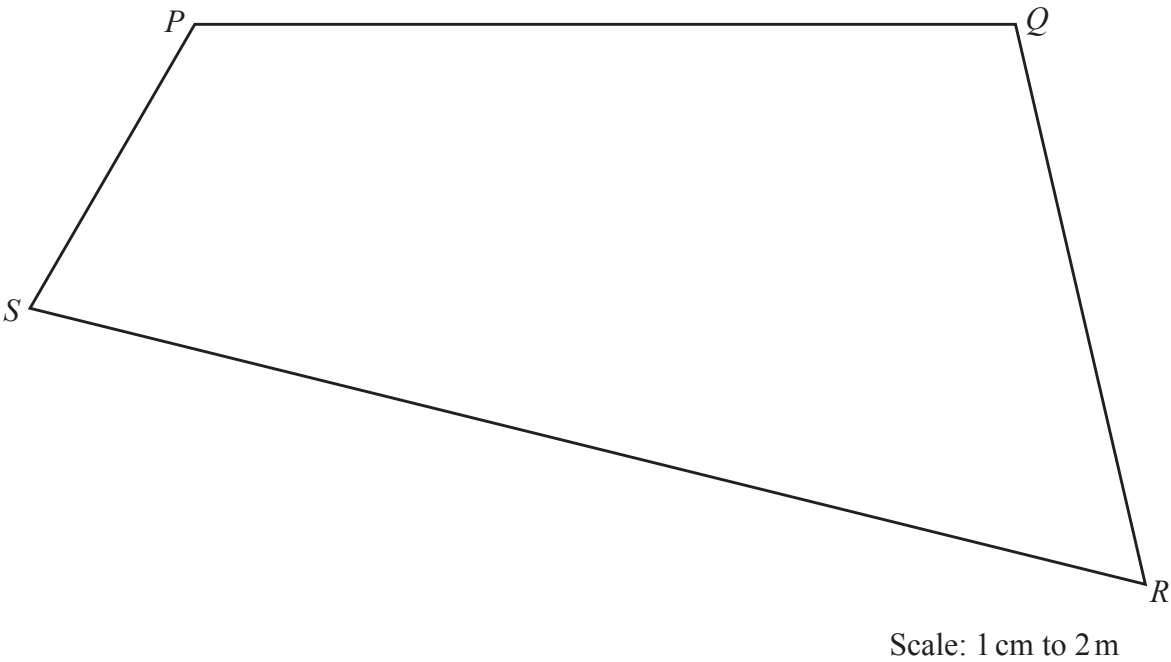
58. Question | 0580 Oct-Nov 2019 P2 V2 Q12

- 12** A regular polygon has an interior angle of 176° .
- Find the number of sides of this polygon.

..... [3]

59. Question | 0580 Oct-Nov 2019 P2 V2 Q17

- 17** The diagram shows a scale drawing of Lei’s garden, $PQRS$.
The scale is 1 centimetre represents 2 metres.



Lei has a bird table in the garden that is

- equidistant from PQ and QR

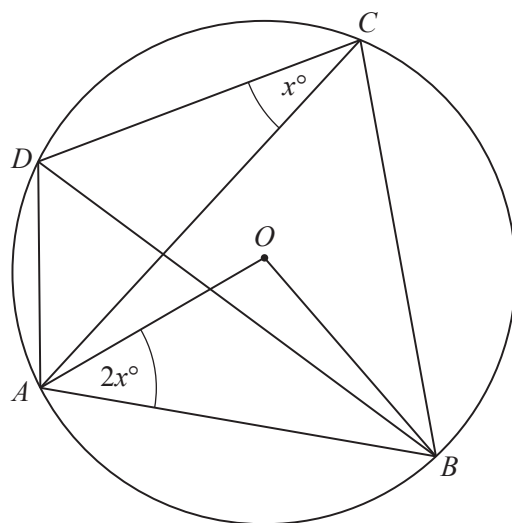
and

- 13 m from R .

On the diagram, construct the position of the bird table.
Use a ruler and compasses only and show all your construction arcs.

[4]

19

NOT TO
SCALE

In the diagram, A , B , C and D lie on the circumference of a circle, centre O .
Angle $ACD = x^\circ$ and angle $OAB = 2x^\circ$.

Find an expression, in terms of x , in its simplest form for

(a) angle AOB ,

Angle $AOB = \dots\dots\dots$ [1]

(b) angle ACB ,

Angle $ACB = \dots\dots\dots$ [1]

(c) angle DAB .

Angle $DAB = \dots\dots\dots$ [2]

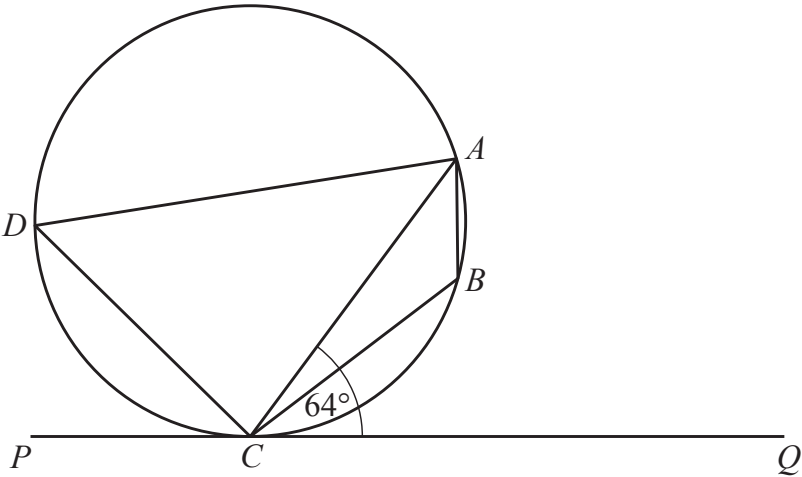
61. Question | 0580 Feb-March 2020 P2 V2 Q4

4 Find the interior angle of a regular polygon with 24 sides.

..... [2]

62. Question | 0580 Feb-March 2020 P2 V2 Q15

15



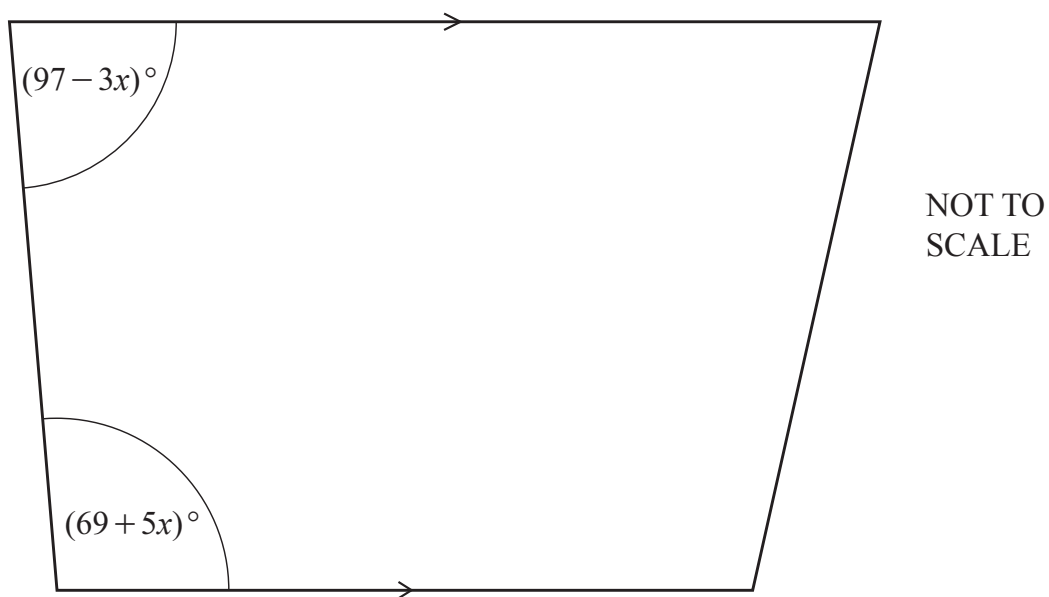
NOT TO
SCALE

A, B, C and D lie on the circle.
 PCQ is a tangent to the circle at C .
Angle $ACQ = 64^\circ$.

Work out angle ABC , giving reasons for your answer.

Angle $ABC =$ because
.....
..... [3]

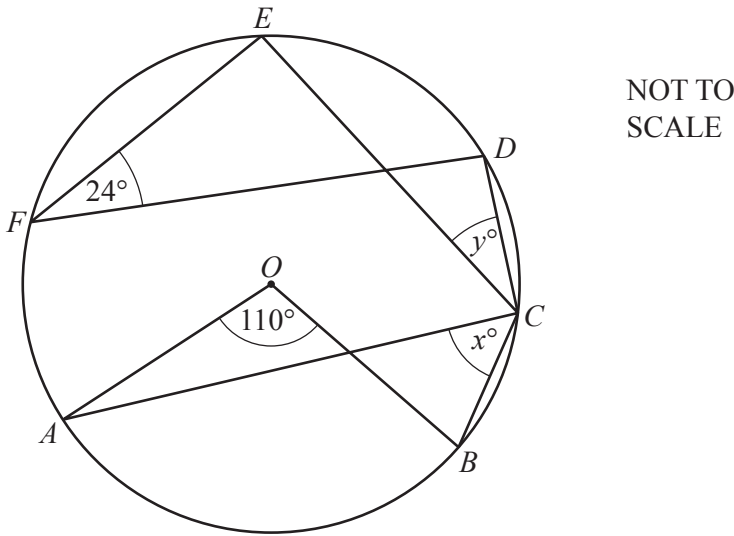
- 6 The diagram shows a trapezium.



Work out the value of x .

$x =$ [3]

10



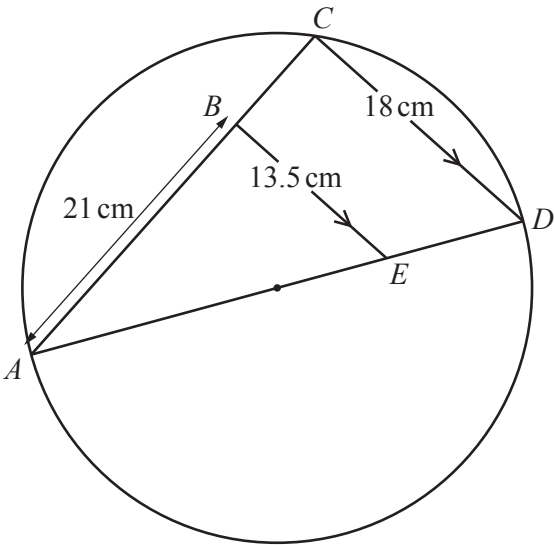
Points A, B, C, D, E and F lie on the circle, centre O .

Find the value of x and the value of y .

$x =$

$y =$ [2]

13



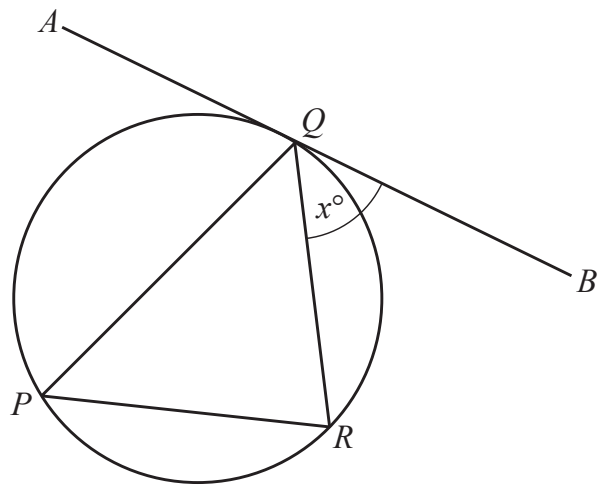
NOT TO
SCALE

C lies on a circle with diameter AD .
 B lies on AC and E lies on AD such that BE is parallel to CD .
 $AB = 21\text{ cm}$, $CD = 18\text{ cm}$ and $BE = 13.5\text{ cm}$.

Work out the radius of the circle.

..... cm [5]

15



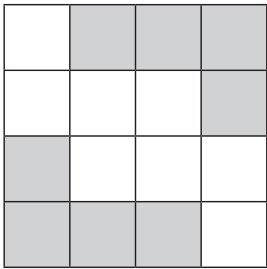
NOT TO
SCALE

P, R and Q are points on the circle.
 AB is a tangent to the circle at Q .
 QR bisects angle PQB .
Angle $BQR = x^\circ$ and $x < 60$.

Use this information to show that triangle PQR is an isosceles triangle.
Give a geometrical reason for each step of your work.

[3]

1

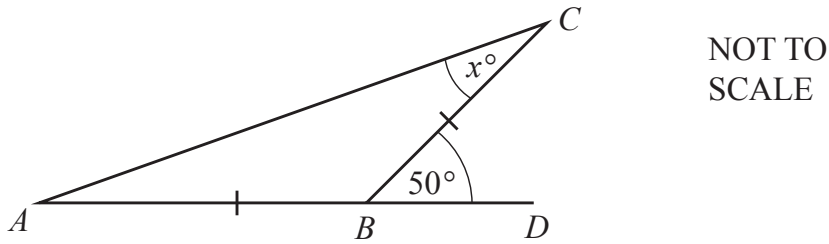


Write down the order of rotational symmetry of the diagram.

..... [1]

68. Question | 0580 May-June 2020 P2 V2 Q3

3



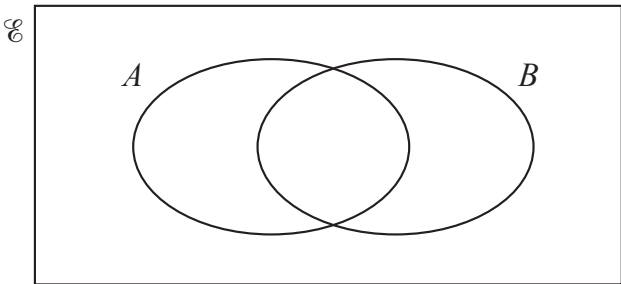
$AB = BC$ and ABD is a straight line.

Find the value of x .

$x =$ [2]

69. Question | 0580 May-June 2020 P2 V2 Q7

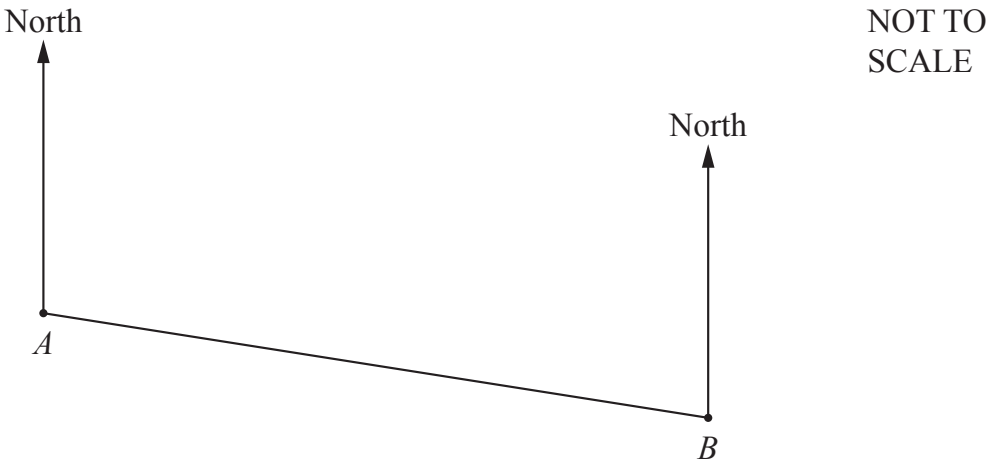
7



On the Venn diagram, shade the region $A \cap B$.

[1]

9

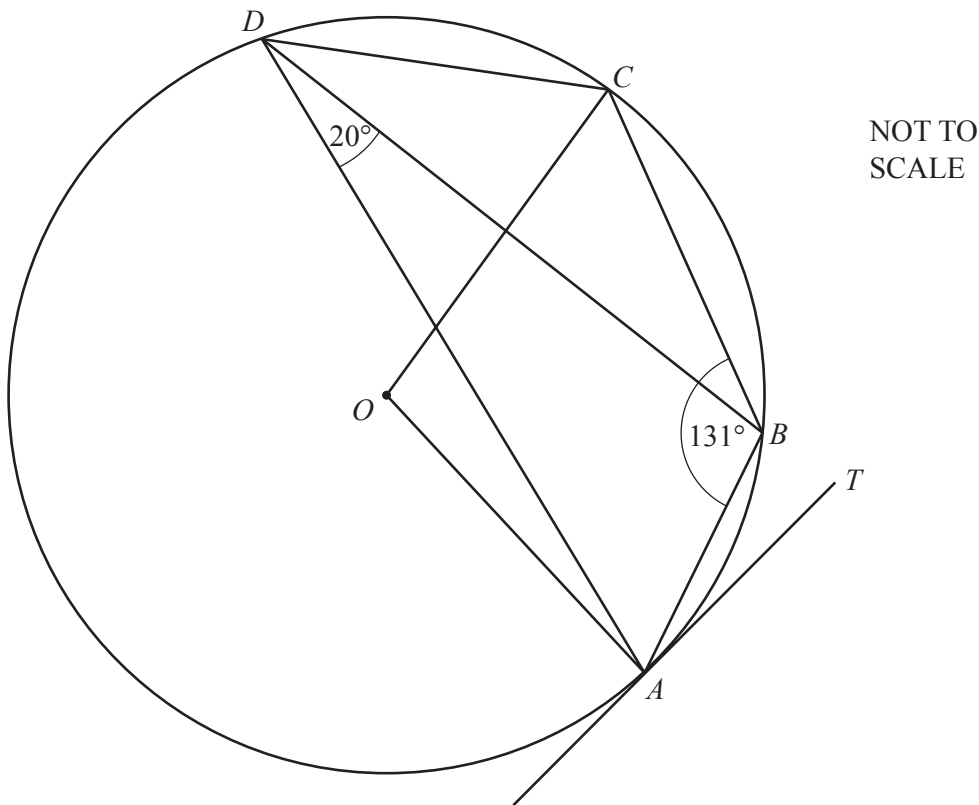


The bearing of B from A is 105° .

Find the bearing of A from B .

..... [2]

20



A, B, C and D lie on the circle, centre O .
 TA is a tangent to the circle at A .
Angle $ABC = 131^\circ$ and angle $ADB = 20^\circ$.

Find

(a) angle ADC ,

Angle $ADC = \dots\dots\dots$ [1]

(b) angle AOC ,

Angle $AOC = \dots\dots\dots$ [1]

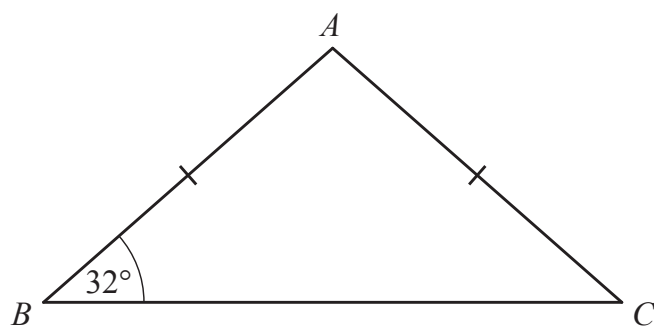
(c) angle BAT ,

Angle $BAT = \dots\dots\dots$ [1]

(d) angle OAB .

Angle $OAB = \dots\dots\dots$ [1]

3

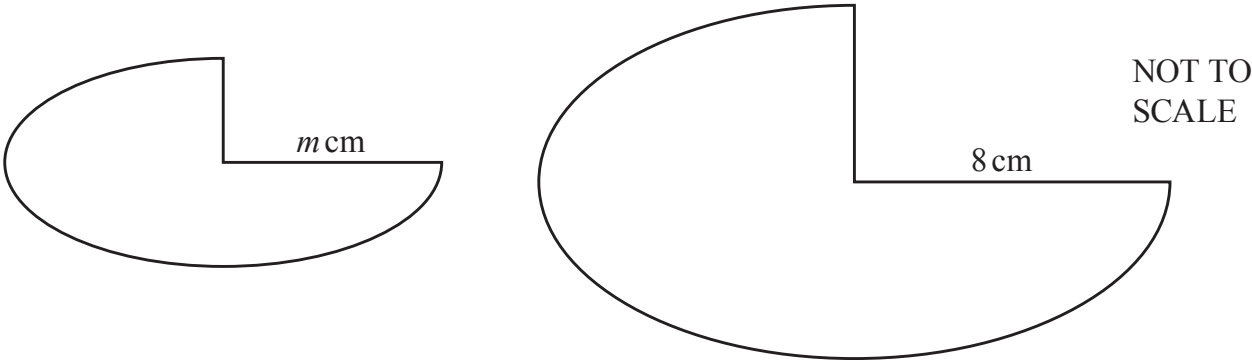
NOT TO
SCALE

Triangle ABC is isosceles.
Angle $ABC = 32^\circ$ and $AB = AC$.

Find angle BAC .

Angle $BAC = \dots\dots\dots$ [2]

17



The diagram shows two shapes that are mathematically similar.
The smaller shape has area 52.5 cm^2 and the larger shape has area 134.4 cm^2 .

Calculate the value of m .

$m = \dots\dots\dots$ [3]

74. Question | 0580 Oct-Nov 2020 P2 V1 Q2

- 2** A field, ABC , is in the shape of a triangle.
 $AC = 500\text{ m}$ and $BC = 650\text{ m}$.

Using a ruler and compasses only, complete the scale drawing of the field ABC .

Leave in your construction arcs.

Use a scale of 1 cm to represent 100 m.

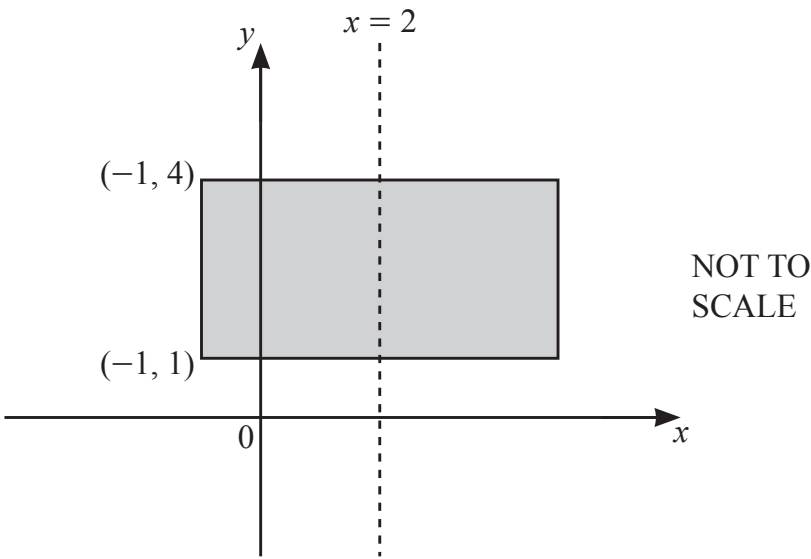
The side AB has been drawn for you.



Scale: 1 cm to 100 m

[3]

11



The diagram shows a rectangle with a line of symmetry at $x = 2$.
Two vertices of the rectangle are at $(-1, 1)$ and $(-1, 4)$.

The shaded region is defined by the inequalities $a \leq x \leq b$ and $c \leq y \leq d$.

Find the values of a , b , c and d .

$a =$

$b =$

$c =$

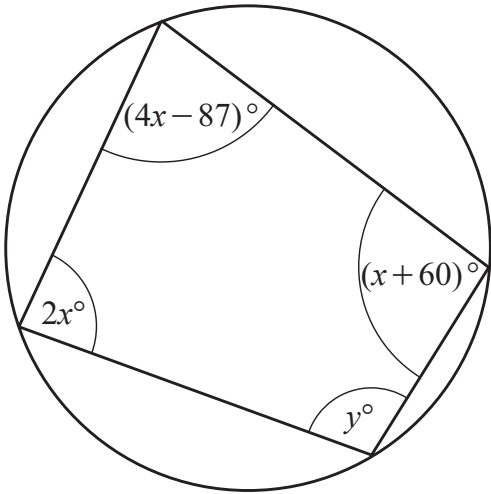
$d =$ [2]

12 The interior angle of a regular polygon with n sides is 156° .

Work out the value of n .

$n =$ [2]

20



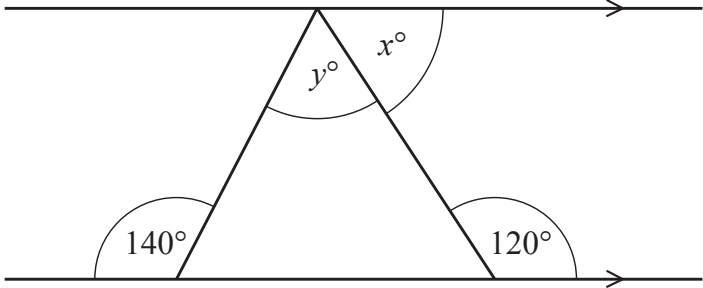
NOT TO
SCALE

The diagram shows a cyclic quadrilateral.

Find the value of y .

$y =$ [4]

4



NOT TO
SCALE

The diagram shows a triangle drawn between a pair of parallel lines.

Find the value of x and the value of y .

$x = \dots\dots\dots$

$y = \dots\dots\dots$ [3]

8 Calculate the size of one interior angle of a regular polygon with 40 sides.

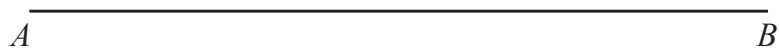
$\dots\dots\dots$ [2]

- 3** In triangle ABC , $BC = 7.6$ cm and $AC = 6.2$ cm.

Using a ruler and compasses only, construct triangle ABC .

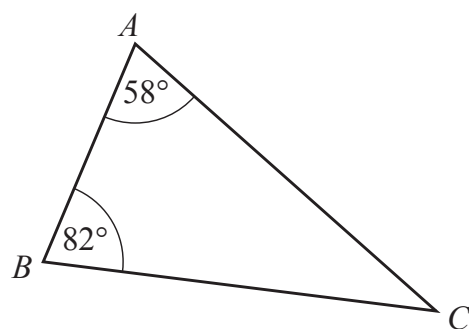
Leave in your construction arcs.

The side AB has been drawn for you.



[2]

6

NOT TO
SCALE

The diagram shows triangle ABC .

The triangle is reflected in the line BC to give a quadrilateral $ABDC$.

(a) Write down the mathematical name of the quadrilateral $ABDC$.

..... [1]

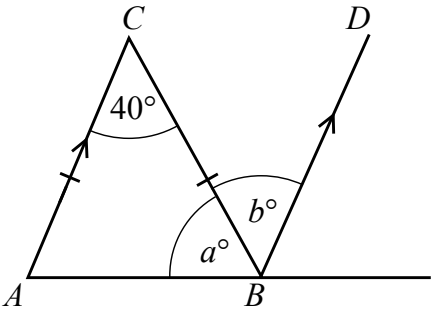
(b) Find angle ACD .

Angle $ACD =$ [2]

- 7** **Using a ruler and pair of compasses only**, construct a triangle with sides 5 cm, 8 cm and 10 cm. Leave in your construction arcs.

83. Question | 0580 Specimen 2020 P2 Q8

8



NOT TO
SCALE

Triangle ABC is isosceles.
 AC is parallel to BD .

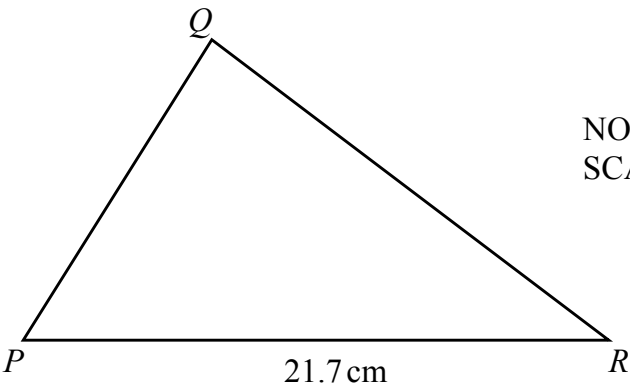
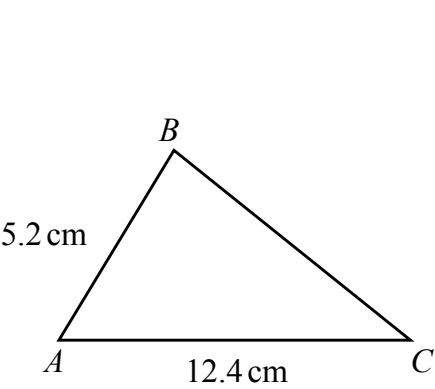
Find the value of a and the value of b .

$a =$

$b =$ [2]

84. Question | 0580 Specimen 2020 P2 Q12

12 Triangle ABC is similar to triangle PQR .



NOT TO
SCALE

Find PQ .

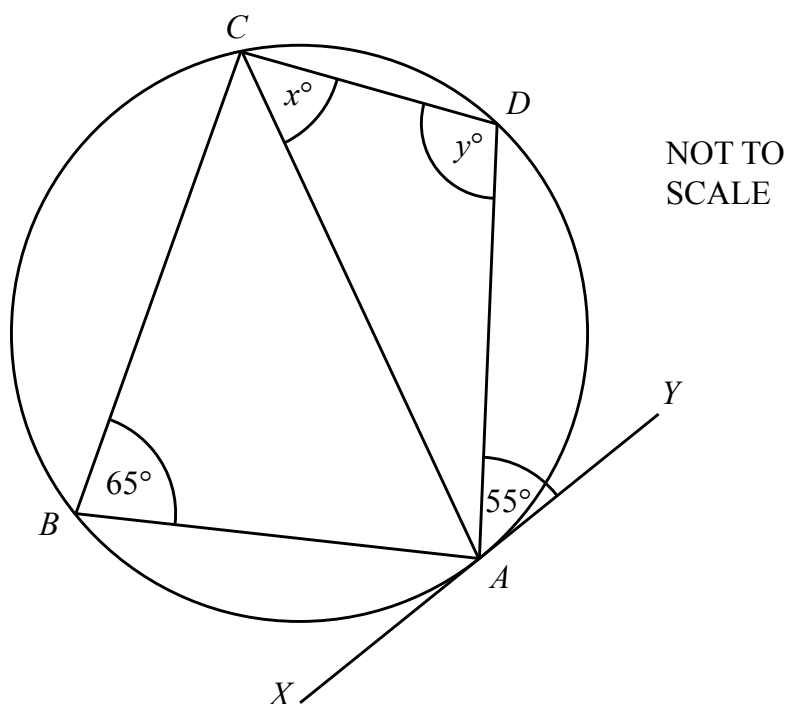
$PQ =$ cm [2]

16 A hexagon has five angles that each measure 115° .

Calculate the size of the sixth angle.

..... [3]

26



A , B , C and D are points on the circumference of the circle.
The line XY is a tangent to the circle at A .

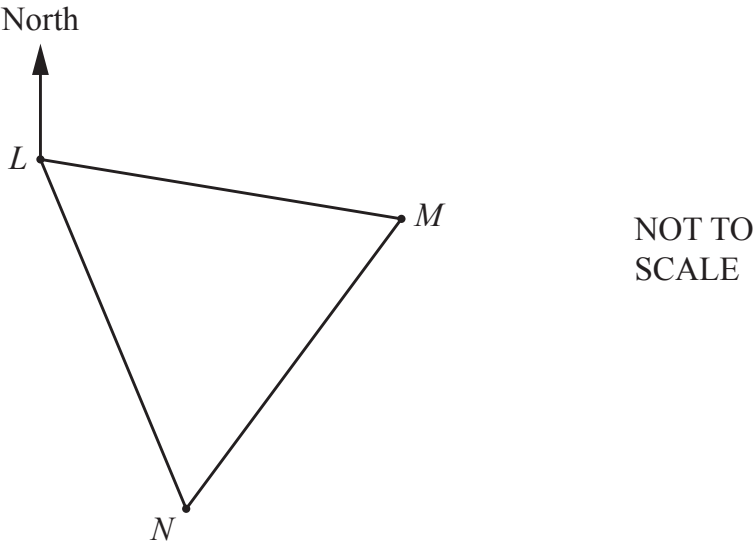
- (a) Find the value of x , giving a reason for your answer.

$x = \dots\dots\dots$ because $\dots\dots\dots$
 $\dots\dots\dots$ [2]

- (b) Find the value of y , giving a reason for your answer.

$y = \dots\dots\dots$ because $\dots\dots\dots$
 $\dots\dots\dots$ [2]

10

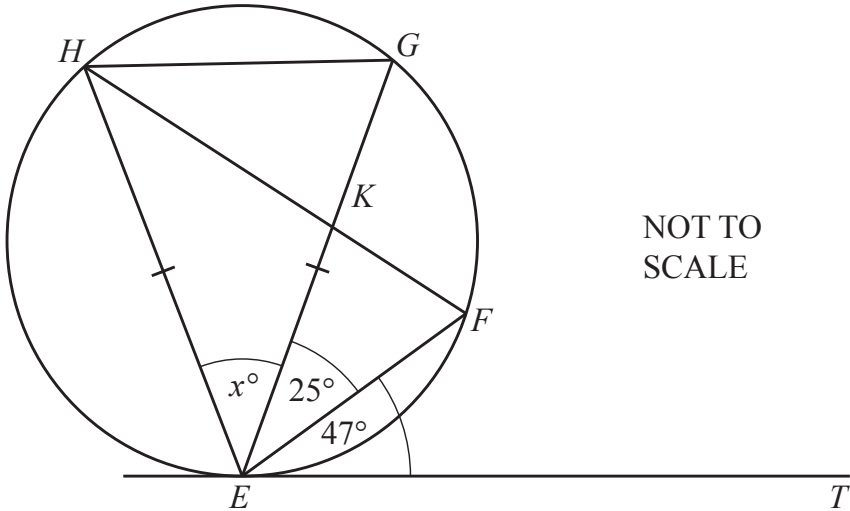


On a map, the positions of the towns L , M and N form an equilateral triangle.
The bearing of M from L is 103° .

Work out the bearing of L from N .

..... [2]

15



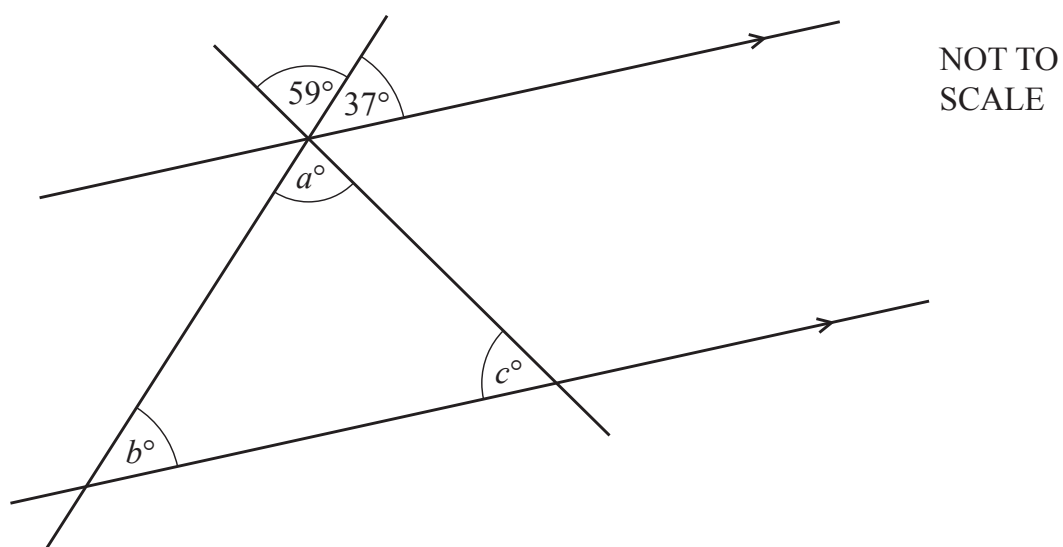
NOT TO
SCALE

Points E, F, G and H lie on the circle and $EG = EH$.
 HF and EG intersect at K .
 ET is a tangent to the circle at E .
Angle $FET = 47^\circ$ and angle $FEG = 25^\circ$.

Find the value of x .

$x = \dots\dots\dots$ [2]

4



The diagram shows two parallel lines intersected by two straight lines.

Find the values of a , b and c .

$a =$

$b =$

$c =$ [3]

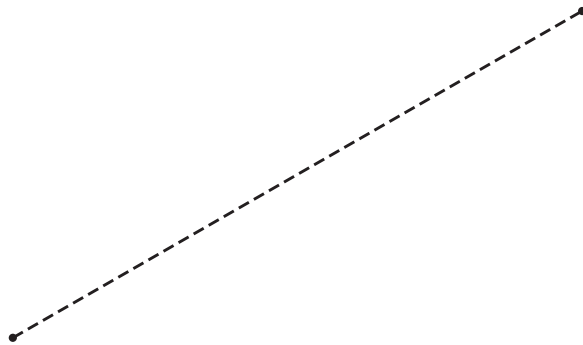
90. Question | 0580 May-June 2021 P2 V2 Q6

- 6 A rhombus has side length 6.5 cm.
The rhombus can be constructed by drawing two triangles.

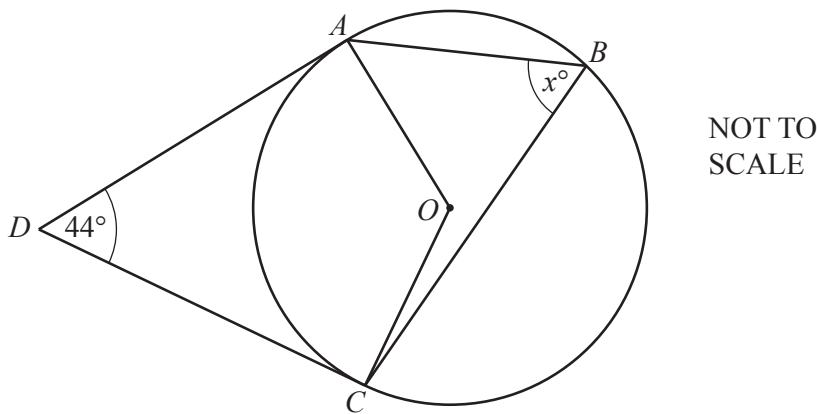
Using a ruler and compasses only, construct the rhombus.

Leave in your construction arcs.

One diagonal of the rhombus has been drawn for you.



13

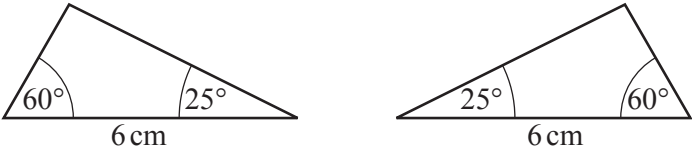
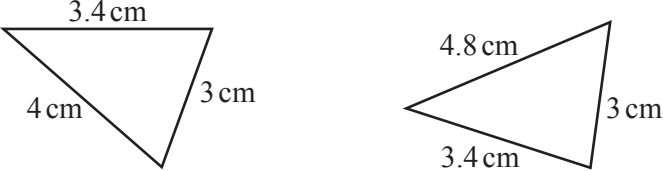
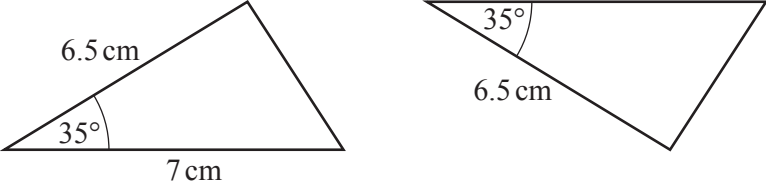
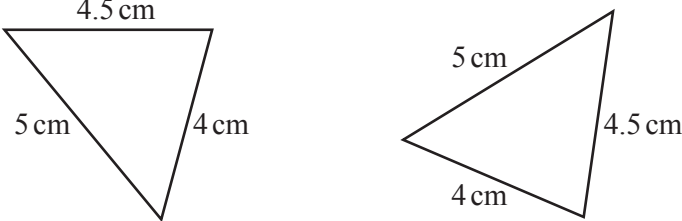
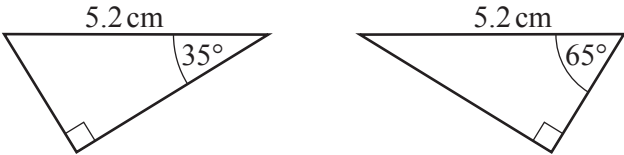


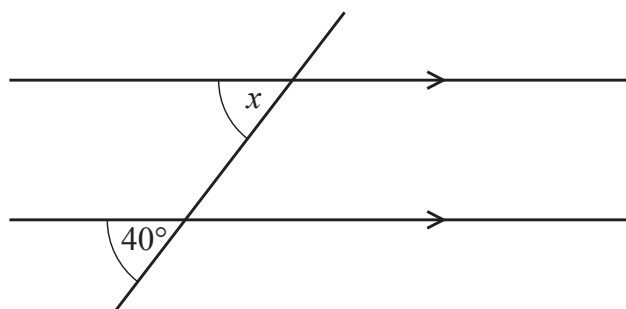
A , B and C are points on a circle, centre O .
 DA and DC are tangents.
Angle $ADC = 44^\circ$.

Work out the value of x .

$x = \dots\dots\dots$ [3]

- 15 Complete the table showing information about the congruence of pairs of triangles.
The first two rows have been completed for you.
All diagrams are not to scale.

Pair of triangles	Congruent or not congruent	Congruence criterion
	Congruent	ASA
	Not congruent	None
		
		
		

3NOT TO
SCALE

The diagram shows a pair of parallel lines and a straight line.

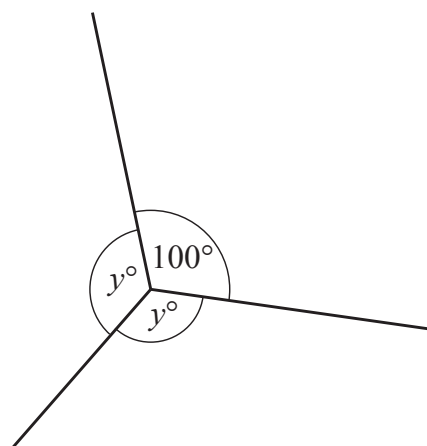
Complete the statement with the correct geometrical reason.

$x = 40^\circ$ because the angles are

[1]

94. Question | 0580 May-June 2021 P2 V3 Q4

4

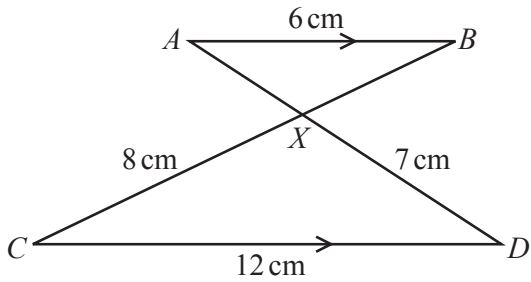


NOT TO
SCALE

Find the value of y .

$y = \dots\dots\dots$ [2]

15



NOT TO
SCALE

In the diagram, AB is parallel to CD .
 AD and BC intersect at X .
 $AB = 6\text{ cm}$, $CD = 12\text{ cm}$, $CX = 8\text{ cm}$ and $DX = 7\text{ cm}$.

(a) Complete the statement.

Triangle ABX is to triangle DCX . [1]

(b) Work out the length of BX .

$BX = \dots\dots\dots\text{ cm}$ [2]

(c) The area of triangle DCX is 26.906 cm^2 .

Use this value to find the area of

(i) triangle ABX ,

$\dots\dots\dots\text{ cm}^2$ [2]

(ii) triangle ACX .

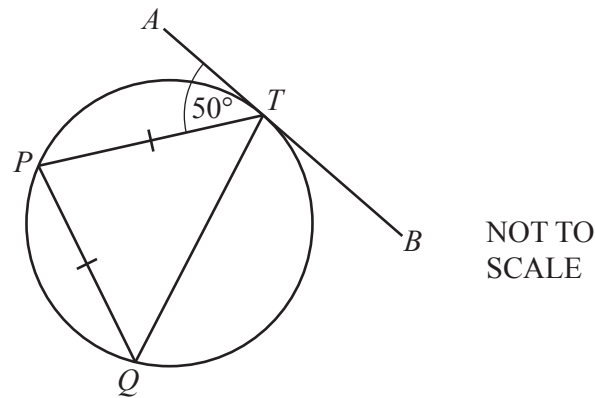
$\dots\dots\dots\text{ cm}^2$ [1]

17 The interior angle of a regular polygon is 175° .

Calculate the number of sides.

..... [2]

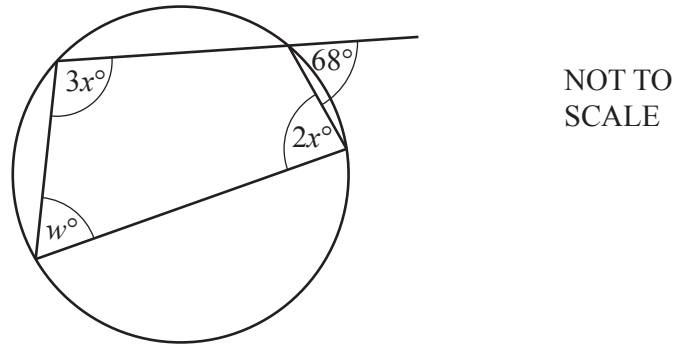
19 (a)



P , Q and T are points on a circle.
 ATB is a tangent to the circle at T and $PT = PQ$.
Find angle TPQ .

Angle $TPQ = \dots\dots\dots$ [2]

(b)



The diagram shows a cyclic quadrilateral with an exterior angle of 68° .
Find the value of w and the value of x .

$w = \dots\dots\dots$
 $x = \dots\dots\dots$ [3]

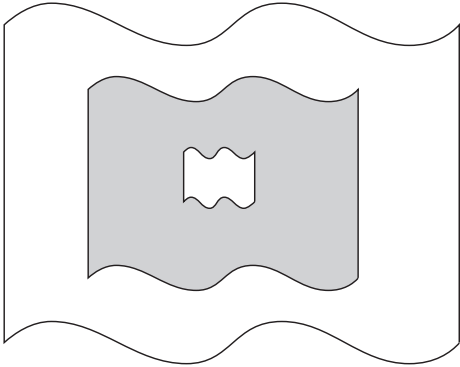
98. Question | 0580 Oct-Nov 2021 P2 V1 Q10

10 A regular polygon has an interior angle of 174° .
Find the number of sides of this polygon.

..... [2]

99. Question | 0580 Oct-Nov 2021 P2 V1 Q15

15



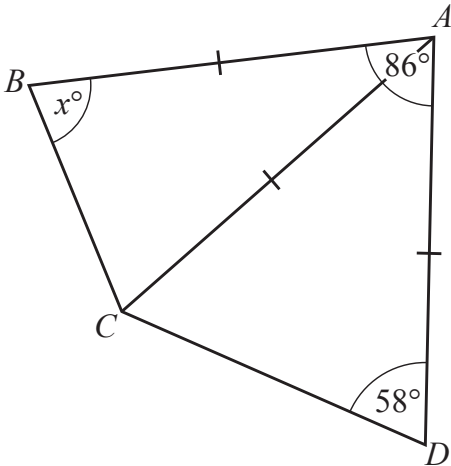
NOT TO
SCALE

The diagram shows three shapes that are mathematically similar.
The heights of the shapes are in the ratio small : medium : large = 1 : 5 : 8.
Find the ratio shaded area : total unshaded area.
Give your answer in its simplest form.

..... : [4]

100. Question | 0580 Oct-Nov 2021 P2 V2 Q4

4



NOT TO
SCALE

Triangle ABC and triangle ACD are isosceles.
Angle $DAB = 86^\circ$ and angle $ADC = 58^\circ$.

Find the value of x .

$x =$ [3]

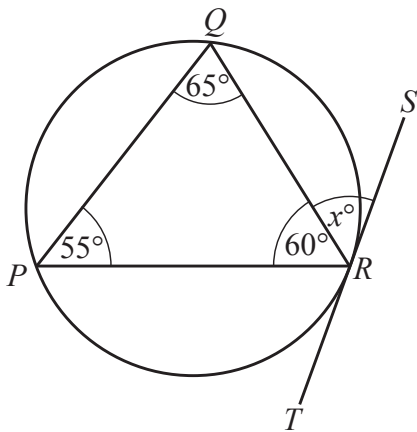
101. Question | 0580 Oct-Nov 2021 P2 V2 Q10

10 The interior angle of a regular polygon is 156° .

Work out the number of sides of this polygon.

..... [2]

14



NOT TO
SCALE

P, Q and R are points on a circle.
 ST is a tangent to the circle at R .

- (a) Write down the value of x .
Give a geometrical reason for your answer.

$x = \dots\dots\dots$ because.....

..... [2]

- (b) Another tangent from the point S touches the circle at V .

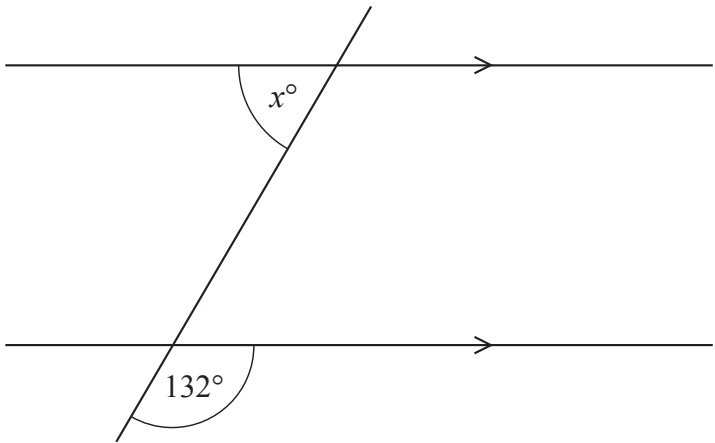
Give a geometrical reason why triangle SVR is isosceles.

.....

..... [1]

103. Question | 0580 Oct-Nov 2021 P2 V3 Q2

2



NOT TO
SCALE

The diagram shows two parallel lines intersecting a straight line.
Find the value of x .

$x =$ [2]

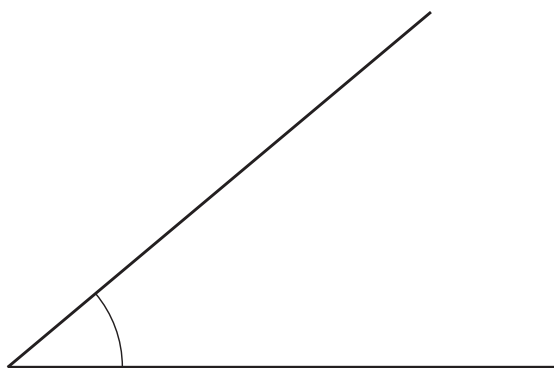
104. Question | 0580 Oct-Nov 2021 P2 V3 Q17

17 Each interior angle of a regular polygon is 178.5° .
Calculate the number of sides of this polygon.

..... [2]

105. Question | 0580 Feb-March 2022 P2 V2 Q1

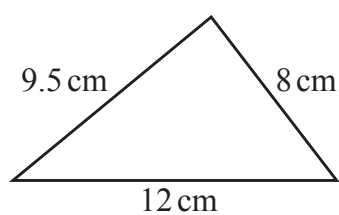
1



Measure the marked angle.

..... [1]

6



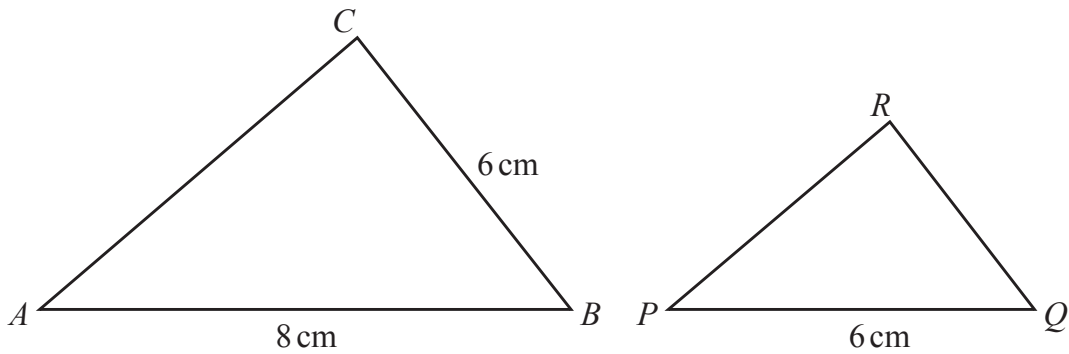
NOT TO
SCALE

Using a ruler and compasses only, construct this triangle.

Leave in your construction arcs.

The side of length 12 cm has been drawn for you.

11



Triangle ABC is mathematically similar to triangle PQR .

(a) Calculate QR .

$QR = \dots\dots\dots\text{ cm}$ [2]

(b) The two triangles are the cross-sections of two mathematically similar prisms.
The volume of the larger prism is 320 cm^3 .

Calculate the volume of the smaller prism.

$\dots\dots\dots\text{ cm}^3$ [2]

108. Question | 0580 May-June 2022 P2 V1 Q12

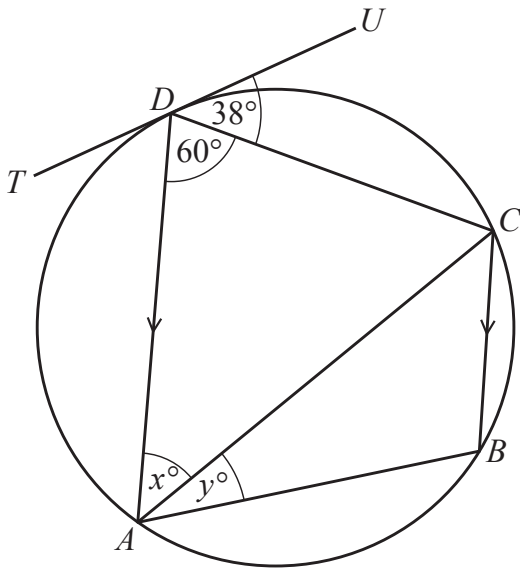
12 The interior angles of a pentagon are in the ratio $4 : 5 : 5 : 7 : 9$.

Find the size of the largest angle.

..... [3]

109. Question | 0580 May-June 2022 P2 V1 Q18

18



NOT TO
SCALE

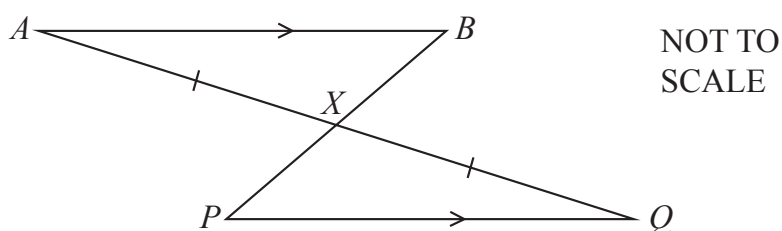
A, B, C and D are points on a circle.
 TU is a tangent to the circle at D .
 DA is parallel to CB .

Find the value of x and the value of y .

$x =$

$y =$ [3]

19



In the diagram, AB is parallel to PQ .
 AQ and PB intersect at X with $AX = XQ$.

Complete the following statements.

In triangles ABX and QPX ,

$AX = XQ$ is given information.

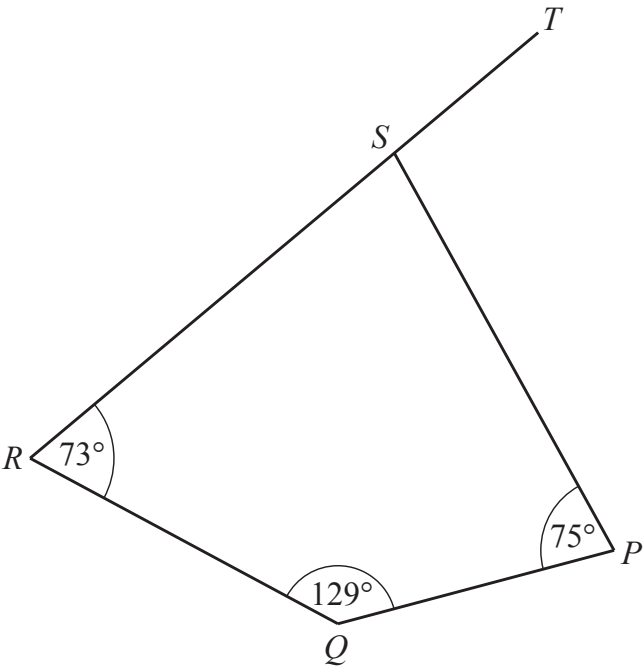
Angle $BAX =$ Angle because

Angle $AXB =$ Angle because

Triangle ABX is congruent to triangle QPX because of the congruency criterion

$PX =$ because the triangles are congruent. [4]

3



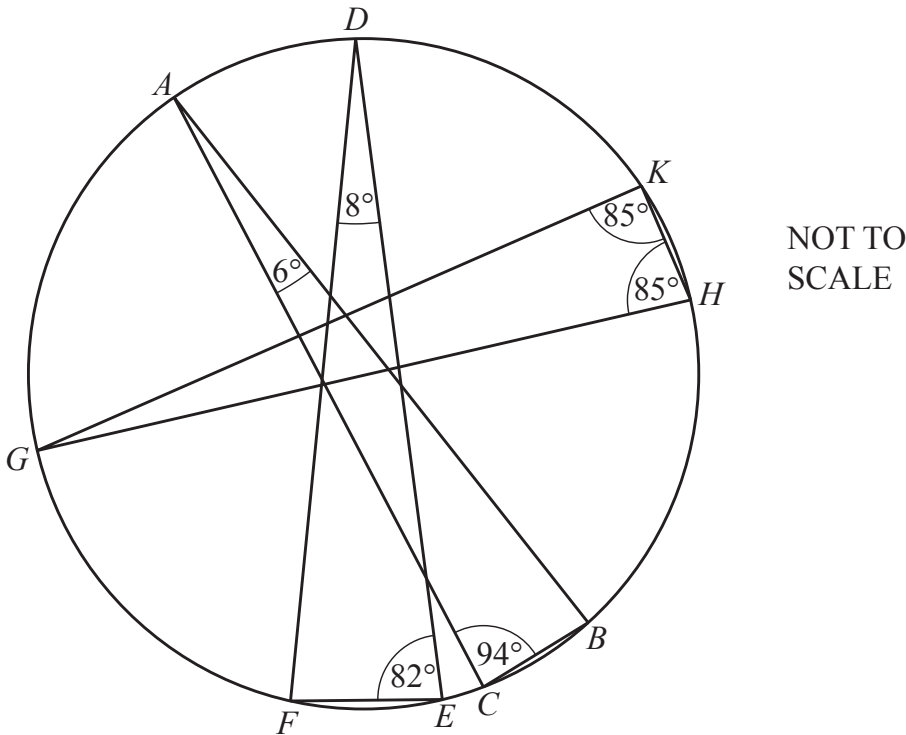
NOT TO
SCALE

PQRS is a quadrilateral.
RST is a straight line.

Find angle *PST*.

Angle *PST* = ... [2]

11 ABC , DEF and GHK are triangles with all vertices on the circumference of a circle.

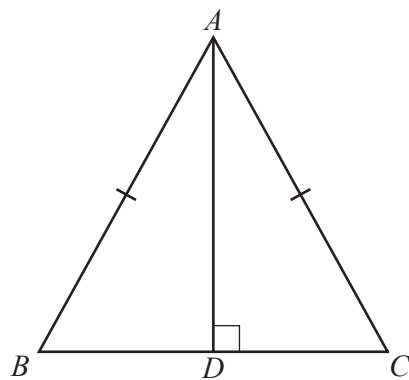


From the list, draw a ring around the line that is a diameter of the circle.

- AB AC DE DF GH GK

[1]

17

NOT TO
SCALE

In triangle ABC , $AC = AB$.

D is the point on BC such that AD is perpendicular to BC .

Complete the following statements to show that triangle ACD and triangle ABD are congruent.

AD is perpendicular to BC so that Angle = Angle = ... $^{\circ}$

$AC = AB$ is given information.

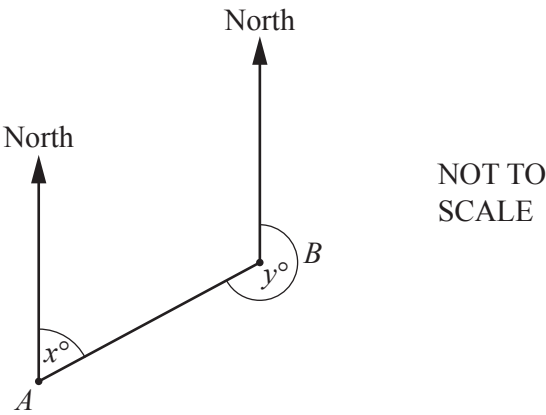
Side is common to both triangles.

Triangle ACD is congruent to triangle ABD because of the congruency criterion [3]

114. Question | 0580 May-June 2022 P2 V3 Q18

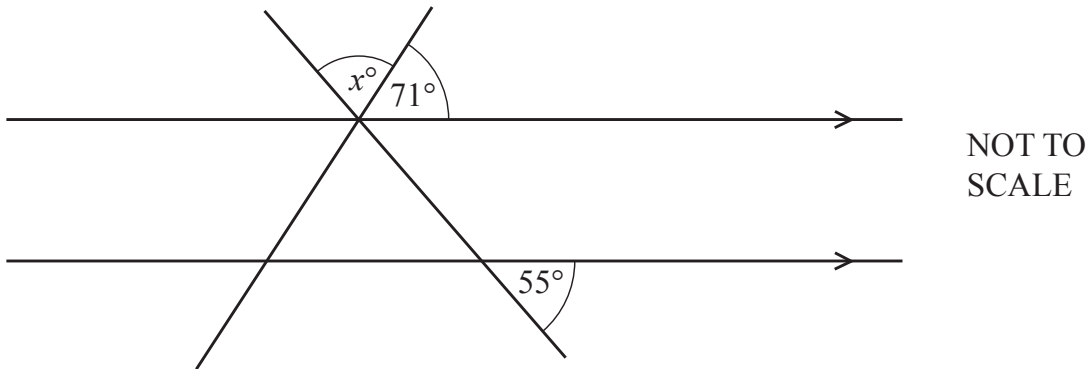
- 18** The bearing of B from A is x° .
The bearing of A from B is y° .
 $x : y = 2 : 7$

Calculate the value of y .



$y =$ [3]

5

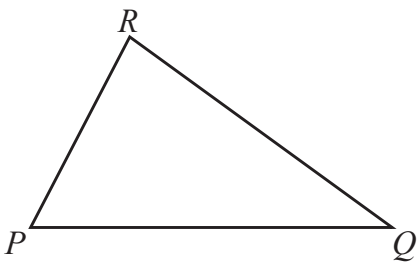
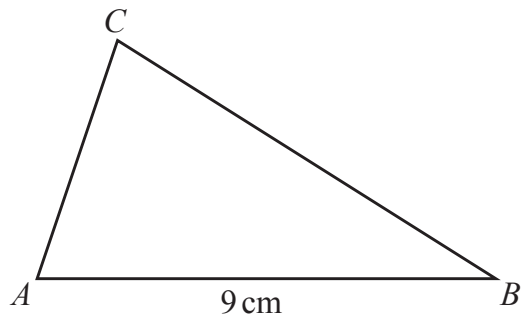


The diagram shows two straight lines intersecting two parallel lines.

Find the value of x .

$x = \dots\dots\dots$ [2]

12



NOT TO
SCALE

Triangle PQR is similar to triangle ABC with $\frac{PR}{AC} = \frac{2}{3}$.

$AB = 9\text{ cm}$ and the area of triangle ABC is 18 cm^2 .

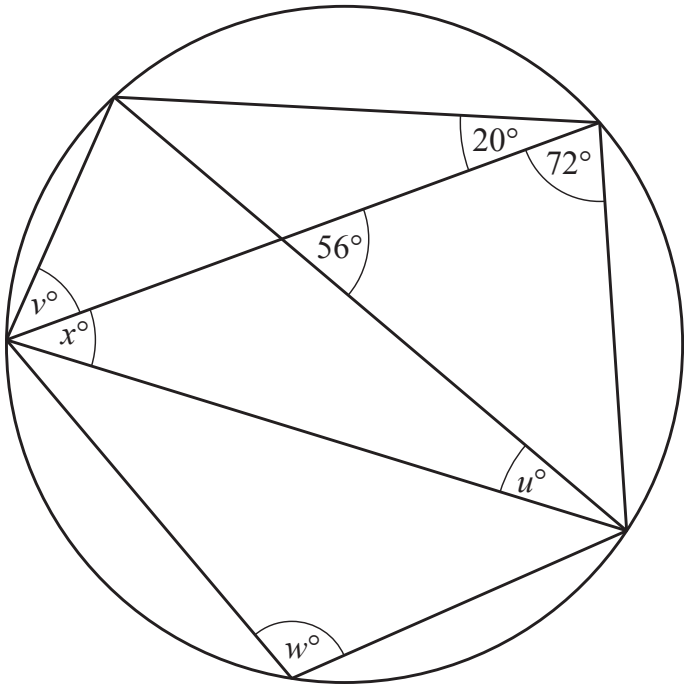
(a) Find the length of PQ .

..... cm [1]

(b) Find the area of triangle PQR .

..... cm^2 [2]

16



NOT TO
SCALE

The diagram shows a circle and eight chords.

Calculate the values of u , v , w and x .

$u =$

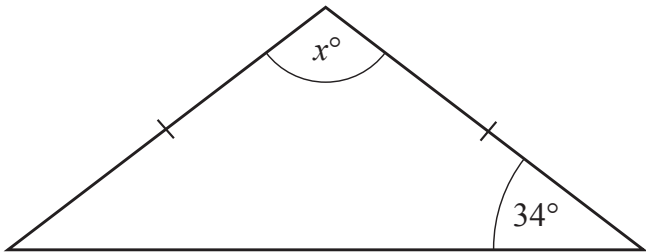
$v =$

$w =$

$x =$ [4]

118. Question | 0580 Oct-Nov 2022 P2 V2 Q1

1



NOT TO
SCALE

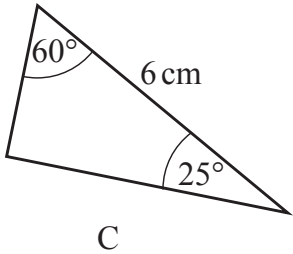
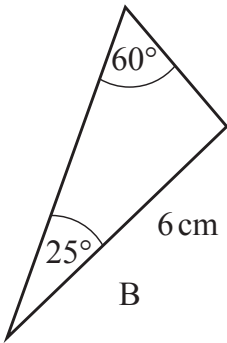
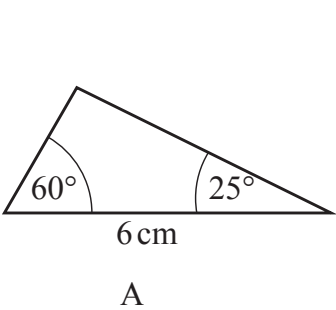
The diagram shows an isosceles triangle.

Find the value of x .

$x =$ [2]

119. Question | 0580 Oct-Nov 2022 P2 V2 Q9

9 The diagram shows three triangles A, B and C.



NOT TO
SCALE

(a) Which two of the triangles A, B and C are congruent with each other?

..... [1]

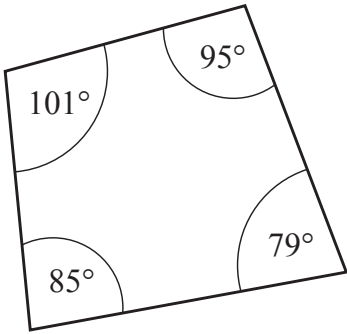
(b) Draw a ring around the congruence criterion that can be used to support your answer to **part (a)**.

SSS ASA SAS RHS

[1]

120. Question | 0580 Oct-Nov 2022 P2 V2 Q15

15



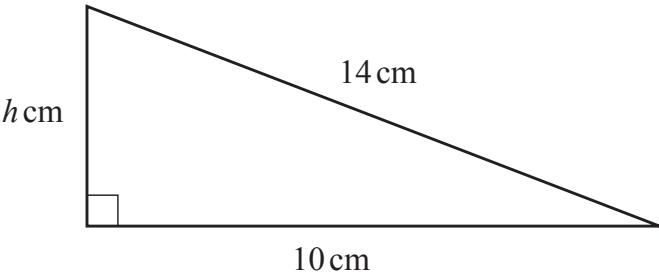
NOT TO
SCALE

The diagram shows a quadrilateral.
Give a geometrical reason why this is a cyclic quadrilateral.

..... [1]

121. Question | 0580 Oct-Nov 2022 P2 V3 Q10

10



NOT TO
SCALE

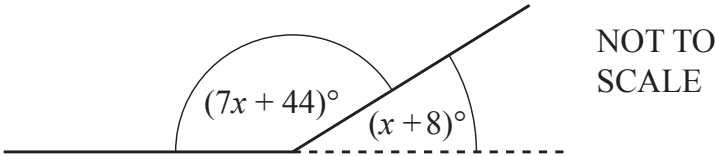
The diagram shows a right-angled triangle.
(a) Calculate the value of h .

$h =$ [3]

(b) Find the perimeter of this triangle.

..... cm [1]

11

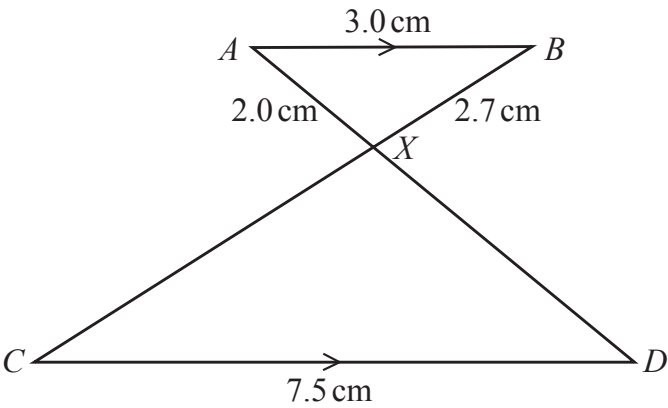


The diagram shows two sides of a regular polygon.
The interior angle of the polygon is $(7x + 44)^\circ$ and the exterior angle is $(x + 8)^\circ$.

Find the number of sides of this polygon.

..... [4]

10



NOT TO
SCALE

In the diagram, AB and CD are parallel.
The lines CB and AD intersect at X .
 $AB = 3.0\text{ cm}$, $AX = 2.0\text{ cm}$, $BX = 2.7\text{ cm}$ and $CD = 7.5\text{ cm}$.

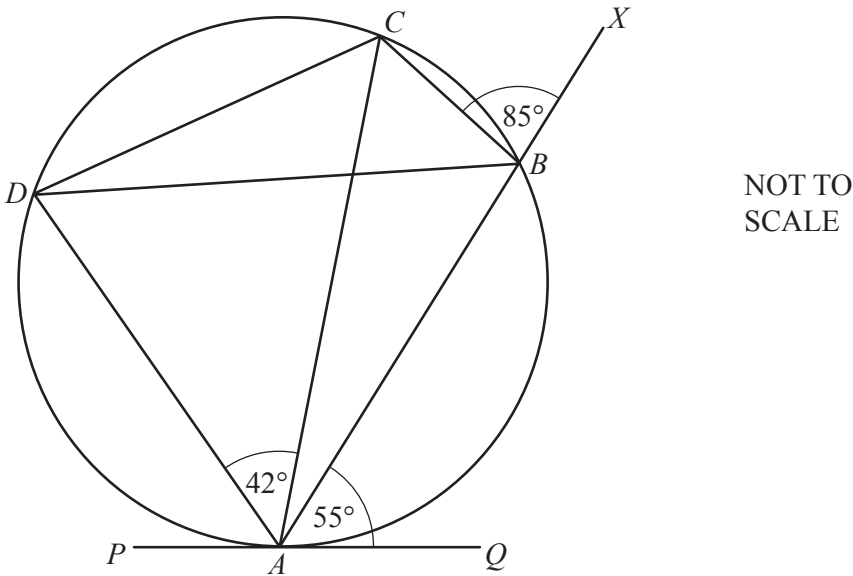
Find the length of BC .

$BC = \dots\dots\dots\text{ cm}$ [3]

12 In a regular polygon, the interior angle and the exterior angle are in the ratio interior : exterior = 11 : 1.
Find the number of sides of this regular polygon.

$\dots\dots\dots$ [3]

17



$ABCD$ is a cyclic quadrilateral, ABX is a straight line and PQ is a tangent to the circle at A . Angle $CBX = 85^\circ$, angle $BAQ = 55^\circ$ and angle $CAD = 42^\circ$.

Find

(a) angle CBD

Angle $CBD = \dots\dots\dots$ [1]

(b) angle ACB

Angle $ACB = \dots\dots\dots$ [1]

(c) angle ADC

Angle $ADC = \dots\dots\dots$ [1]

(d) angle BCD

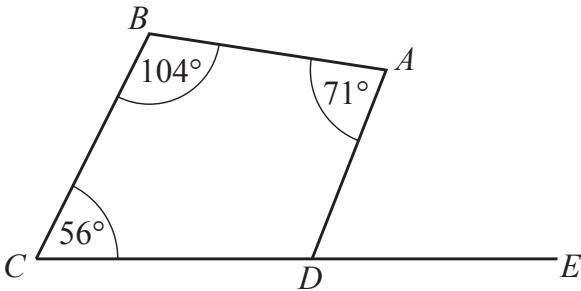
Angle $BCD = \dots\dots\dots$ [2]

(e) angle PAD .

Angle $PAD = \dots\dots\dots$ [1]

126. Question | 0580 May-June 2023 P2 V1 Q1

1



NOT TO
SCALE

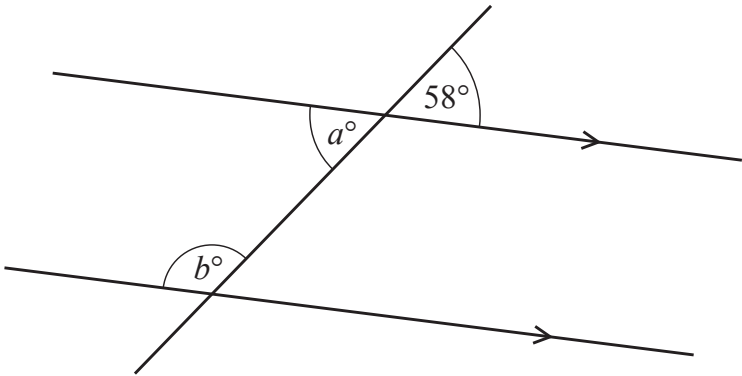
CDE is a straight line.

Find angle ADE .

..... [2]

127. Question | 0580 May-June 2023 P2 V1 Q3

3



NOT TO
SCALE

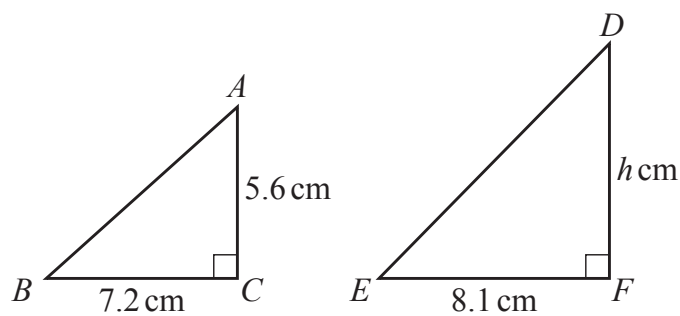
The diagram shows a straight line intersecting two parallel lines.

Find the value of a and the value of b , giving a geometrical reason for each answer.

$a =$ because

$b =$ because [4]

9

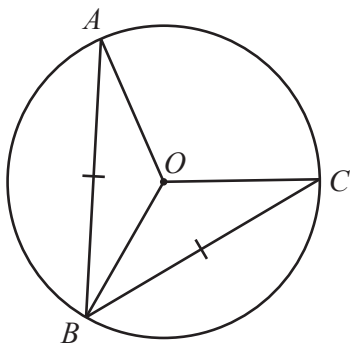
NOT TO
SCALE

Triangle ABC is similar to triangle DEF .

Calculate the value of h .

$h = \dots\dots\dots$ [2]

12 (a)



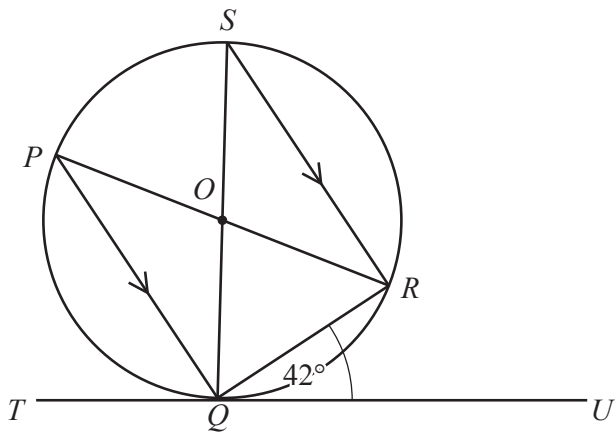
AO , OB and OC are all radii of the circle.
 $AB = BC$.
Therefore triangle AOB is congruent to triangle COB .

Draw a ring around the correct criterion for this statement.

SAS *RHS* *SSS* *ASA*

[1]

(b)



P , Q , R and S are points on the circle and TQU is a tangent to the circle at Q .
 PR and SQ intersect at the centre of the circle, O , and PQ is parallel to SR .
Angle $RQU = 42^\circ$.

Calculate

(i) angle QSR

Angle $QSR = \dots\dots\dots$ [1]

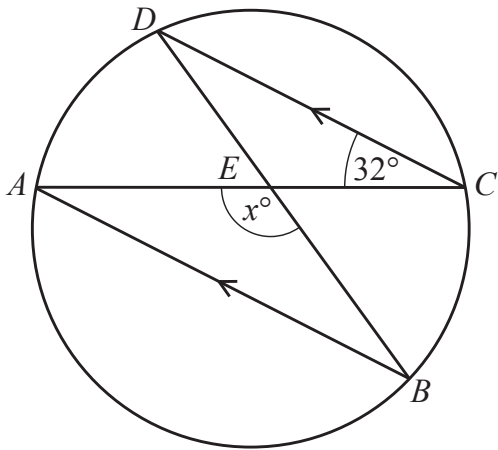
(ii) angle PQS

Angle $PQS = \dots\dots\dots$ [1]

(iii) angle POS .

Angle $POS = \dots\dots\dots$ [1]

13



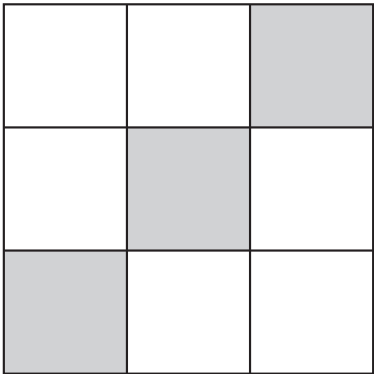
NOT TO
SCALE

A, B, C and D are points on a circle.
 AB is parallel to DC and angle $ACD = 32^\circ$.
Chords AC and DB intersect at E .

Find the value of x .

$x =$ [2]

1



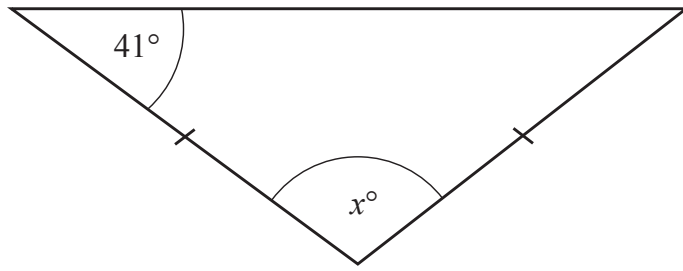
(a) Complete the statement.

The diagram has rotational symmetry of order [1]

(b) On the diagram, draw all the lines of symmetry.

[2]

- 1 The diagram shows an isosceles triangle.

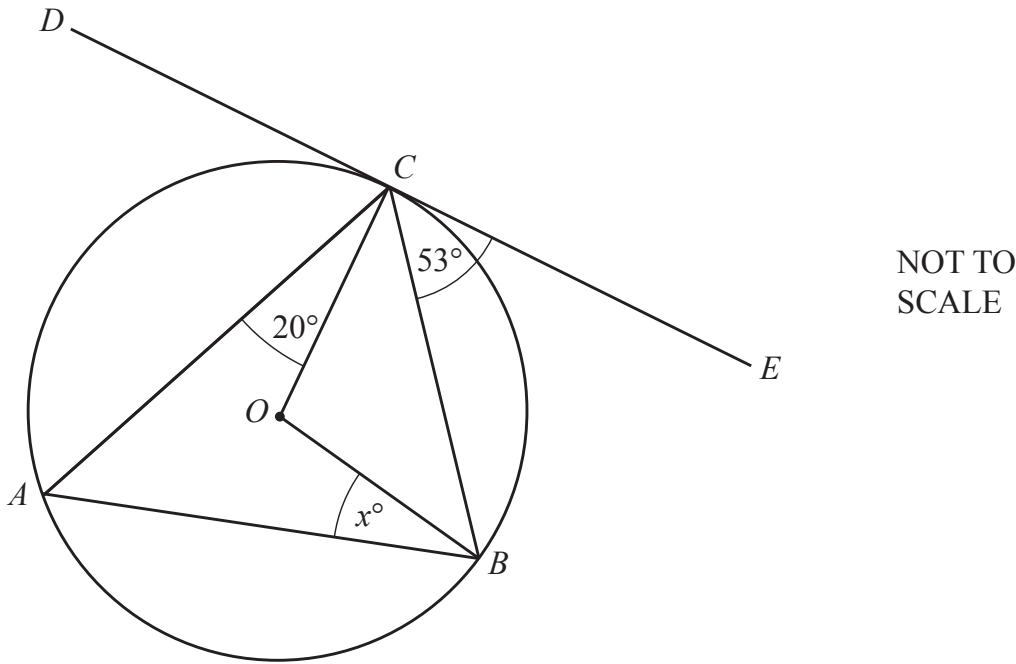


NOT TO
SCALE

Find the value of x .

$x = \dots\dots\dots$ [2]

17



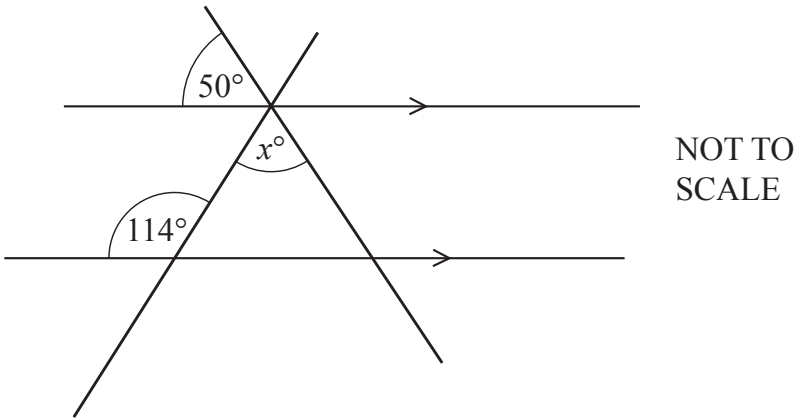
A , B and C are points on the circumference of a circle, centre O .
Tangent DE touches the circle at C .
Angle $BCE = 53^\circ$ and angle $ACO = 20^\circ$.

Find the value of x .

$x = \dots\dots\dots$ [3]

134. Question | 0580 Oct-Nov 2023 P2 V2 Q5

5



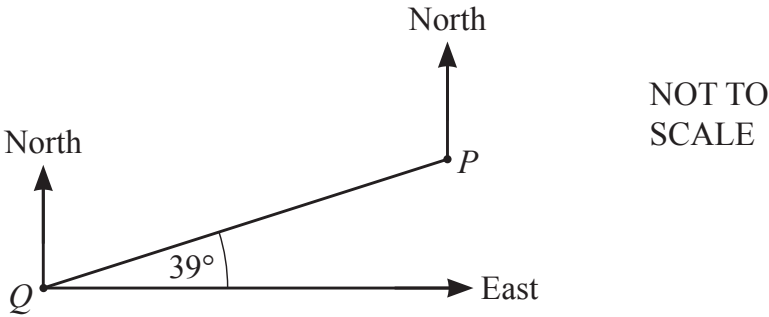
The diagram shows two intersecting straight lines crossing two parallel lines.

Find the value of x .

$x = \dots\dots\dots$ [2]

135. Question | 0580 Oct-Nov 2023 P2 V2 Q7

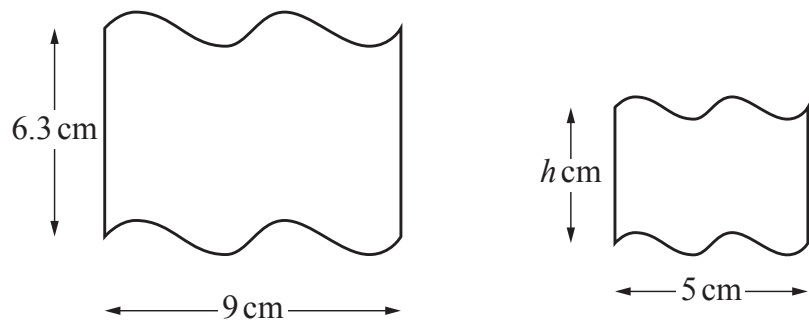
7



Find the bearing of Q from P .

$\dots\dots\dots$ [2]

11



NOT TO
SCALE

The two shapes are mathematically similar.

(a) Find the value of h .

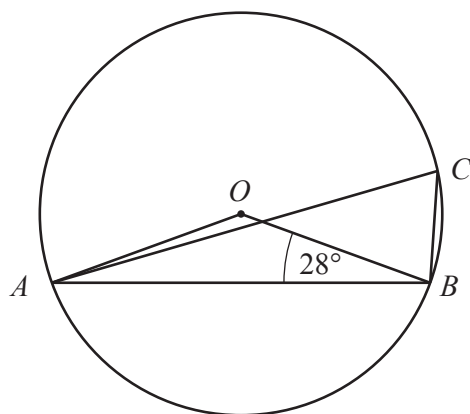
$h = \dots\dots\dots$ [2]

(b) The area of the smaller shape is 16 cm^2 .

Calculate the area of the larger shape.

$\dots\dots\dots\text{ cm}^2$ [2]

17 (a)

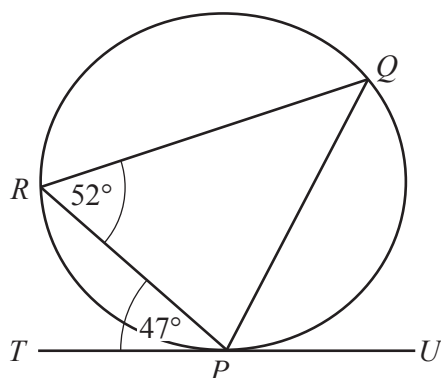
NOT TO
SCALE

A , B and C are points on a circle, centre O .
Angle $OBA = 28^\circ$.

Find angle ACB .

Angle $ACB = \dots\dots\dots$ [2]

(b)

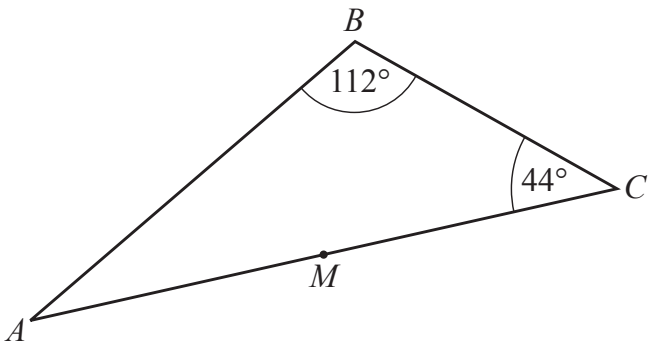
NOT TO
SCALE

P , Q and R are points on a circle.
 TU is a tangent to the circle at P .
Angle $TPR = 47^\circ$ and angle $PRQ = 52^\circ$.

Find angle RPQ .

Angle $RPQ = \dots\dots\dots$ [2]

5



NOT TO
SCALE

The diagram shows triangle ABC .
 M is the midpoint of AC .

Triangle ABC is rotated 180° about centre M .
The image and the original triangle together form a quadrilateral $ABCD$.

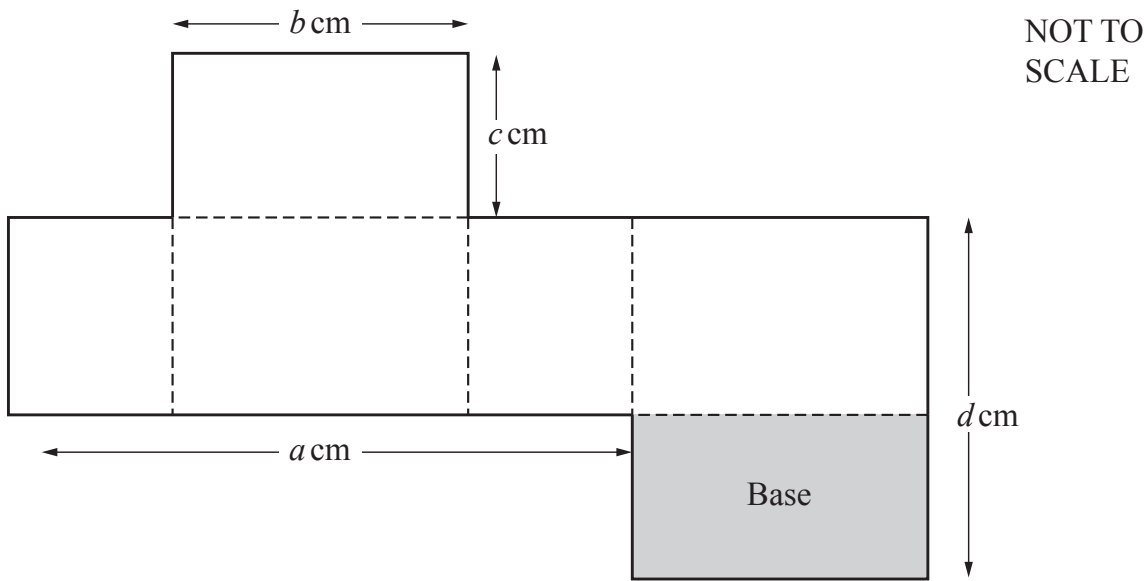
(a) Write down the mathematical name of the quadrilateral $ABCD$.

..... [1]

(b) Find angle BAD .

Angle $BAD =$ [2]

4



The diagram shows the net of a cuboid with its base shaded.
The length of the cuboid is 10 cm, its width is 4 cm and its height is 5 cm.
Write down the values of each of a , b , c and d .

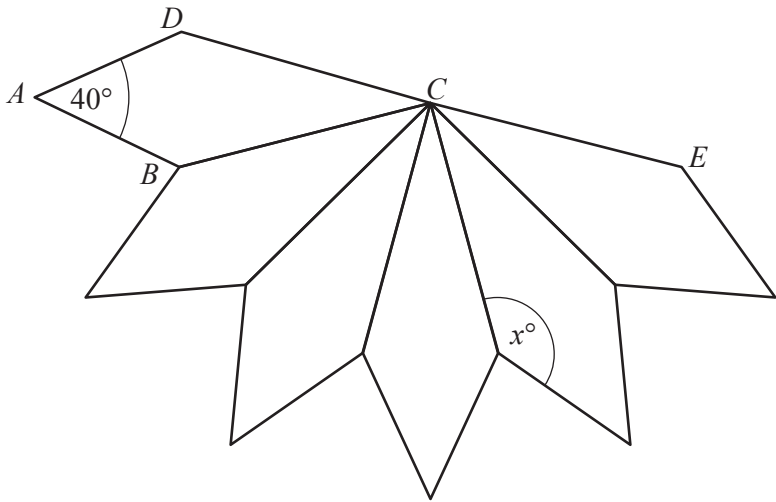
$a = \dots\dots\dots, b = \dots\dots\dots, c = \dots\dots\dots, d = \dots\dots\dots$ [4]

13 The bearing of B from A is 107° .

Calculate the bearing of A from B .

$\dots\dots\dots$ [2]

6



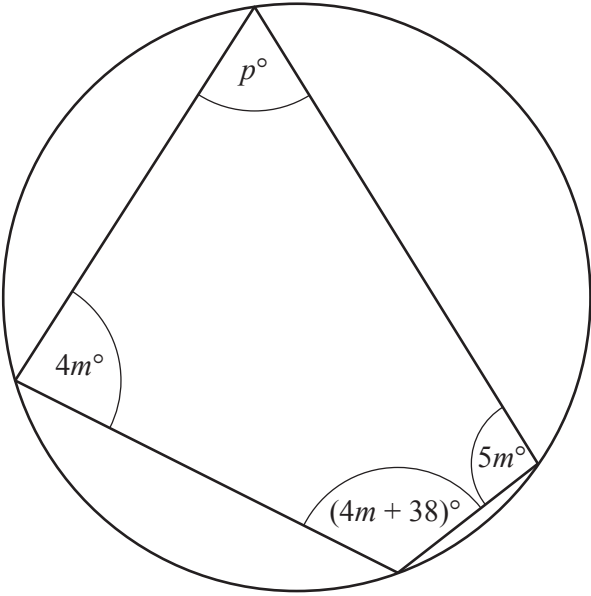
NOT TO
SCALE

The diagram shows 5 kites that are congruent to kite $ABCD$.
Each kite is joined to the next kite along one edge.
Angle $DAB = 40^\circ$ and DCE is a straight line.

Find the value of x .

$x = \dots\dots\dots$ [3]

13



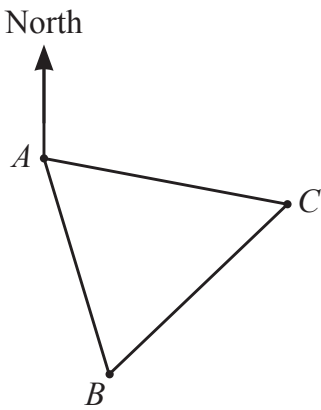
NOT TO
SCALE

The diagram shows a cyclic quadrilateral.

Find the value of p .

$p = \dots\dots\dots [3]$

15



NOT TO
SCALE

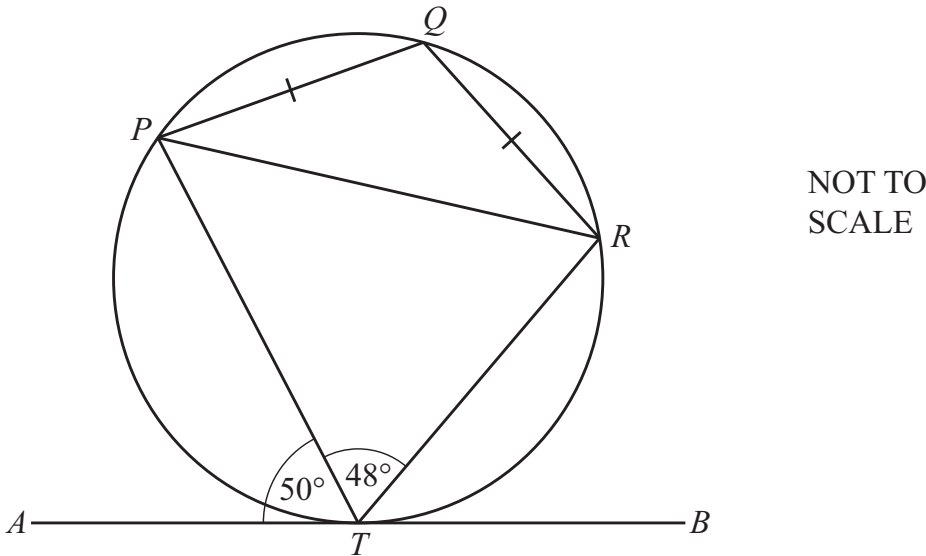
Three towns, A , B and C , are equidistant from each other.
The bearing of C from A is 104° .

Calculate the bearing of B from C .

20 Two parcels are mathematically similar.
The larger parcel has volume 80 cm^3 and height 5.2 cm .
The smaller parcel has volume 33.75 cm^3 .

Calculate the height of the smaller parcel.

14



P, Q, R and T are points on the circle.
 AB is a tangent to the circle at T .
Angle $ATP = 50^\circ$, angle $PTR = 48^\circ$ and $PQ = QR$.

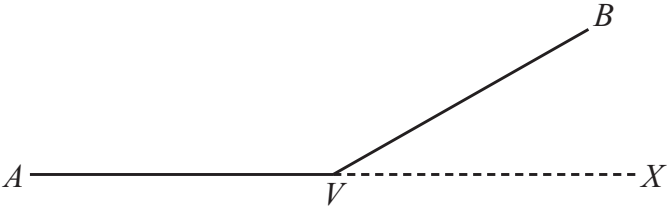
(a) Find angle PRT .

Angle $PRT = \dots\dots\dots [1]$

(b) Find angle QPR .

Angle $QPR = \dots\dots\dots [2]$

18



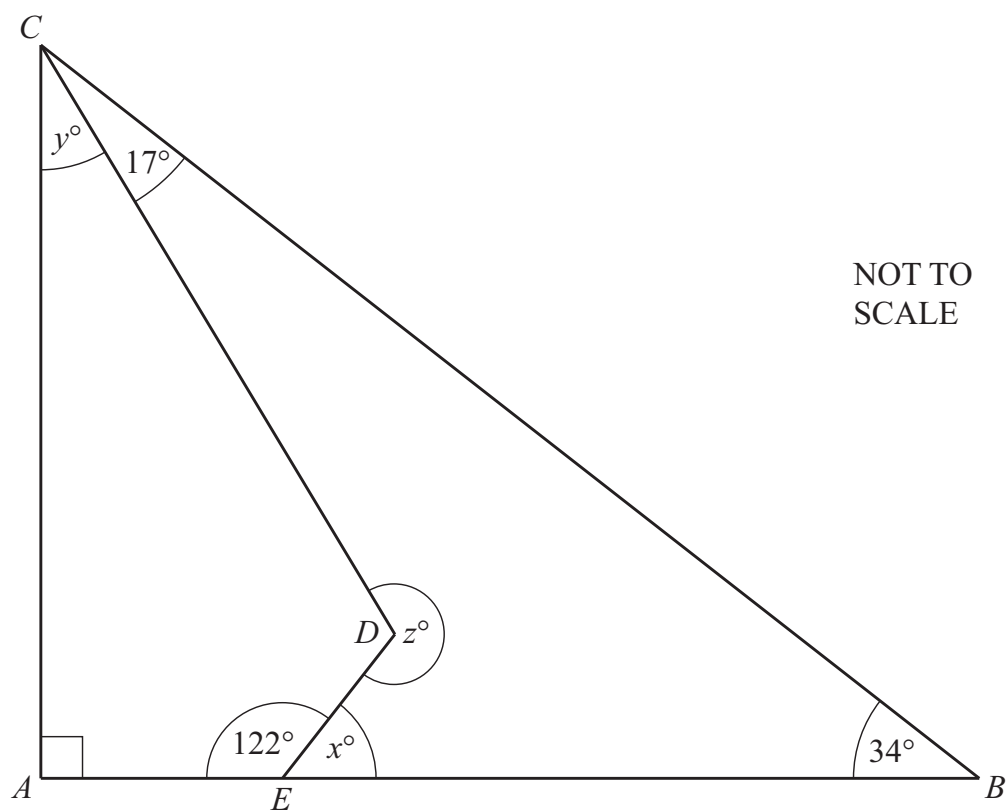
NOT TO
SCALE

The diagram shows two sides, VA and VB , of a regular polygon.
 AVX is a straight line.
Angle $BVX = y^\circ$ and angle $AVB = 11.5y^\circ$.

Find the number of sides of this polygon.

..... [3]

6 The diagram shows a right-angled triangle ABC and a quadrilateral $AEDC$.



Find the value of

(a) x

$x = \dots\dots\dots [1]$

(b) y

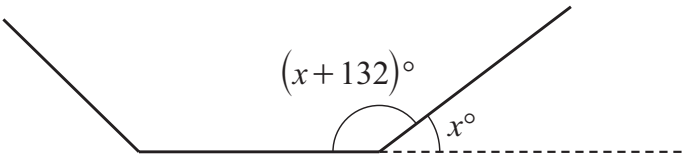
$y = \dots\dots\dots [1]$

(c) z .

$z = \dots\dots\dots [1]$

148. Question | 0580 Oct-Nov 2024 P2 V1 Q9

9



NOT TO
SCALE

The diagram shows part of a regular polygon.
The interior angle of the polygon is 132° larger than the exterior angle.

Calculate the number of sides of this polygon.

..... [3]

149. Question | 0580 Oct-Nov 2024 P2 V1 Q14

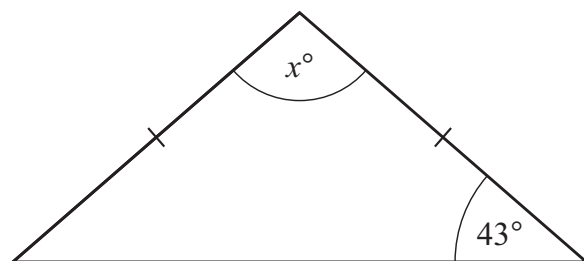
- 14** Two solid steel statues are mathematically similar.
The smaller statue has height 12 cm and the larger statue has height 15 cm.
The larger statue has a mass 2.5 kg.
The density of steel is 8 g/cm^3 .

Calculate the volume of the smaller statue.
[Density = mass $\div$ volume.]

..... cm^3 [4]

150. Question | 0580 Oct-Nov 2024 P2 V2 Q2

- 2 The diagram shows an isosceles triangle.

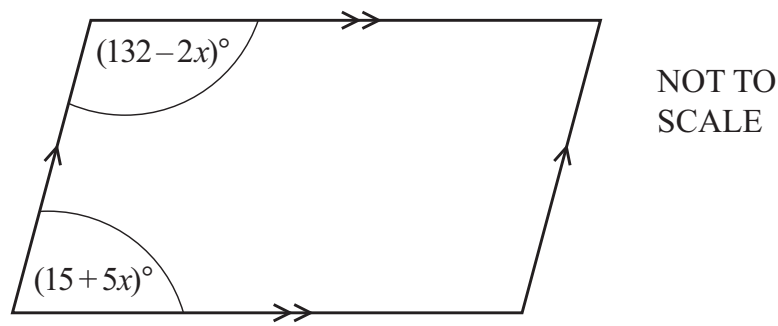


NOT TO
SCALE

Find the value of x .

$x = \dots\dots\dots$ [2]

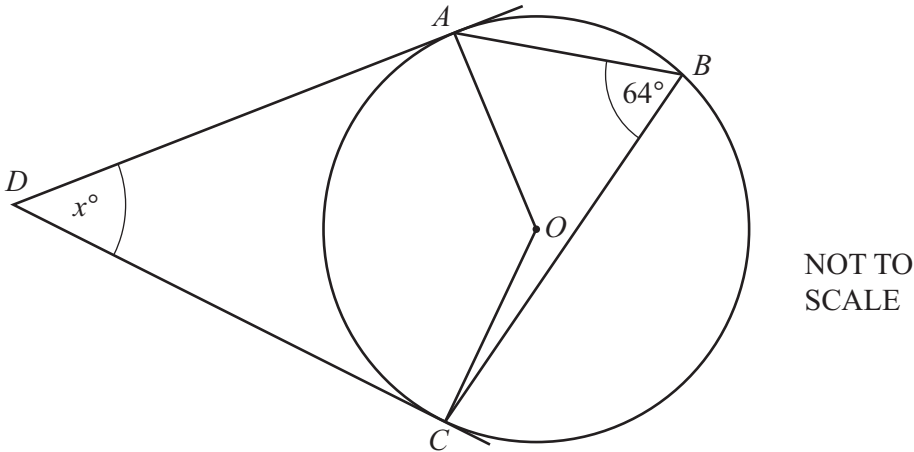
8 The diagram shows a parallelogram.



Work out the size of the smallest interior angle of the parallelogram.

..... [4]

17

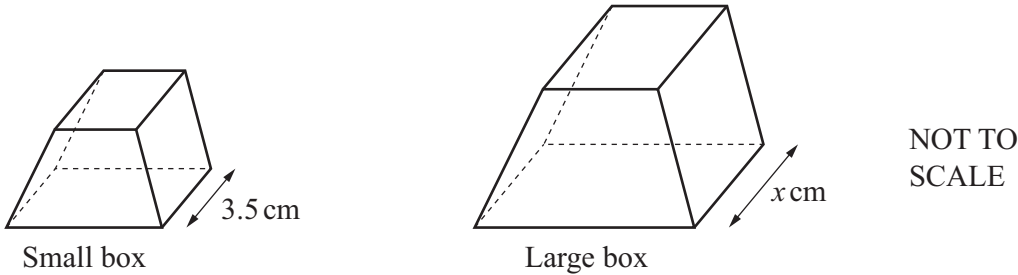


A , B and C are points on the circumference of a circle with centre O .
 DA and DC are tangents to the circle.
Angle $ABC = 64^\circ$.

Work out the value of x .

$x = \dots\dots\dots [2]$

23



The small box is mathematically similar to the large box.
The volume of the large box is 72.8% greater than the volume of the small box.
The small box has length 3.5 cm and the large box has length x cm.

Calculate the value of x .

$x = \dots\dots\dots [3]$

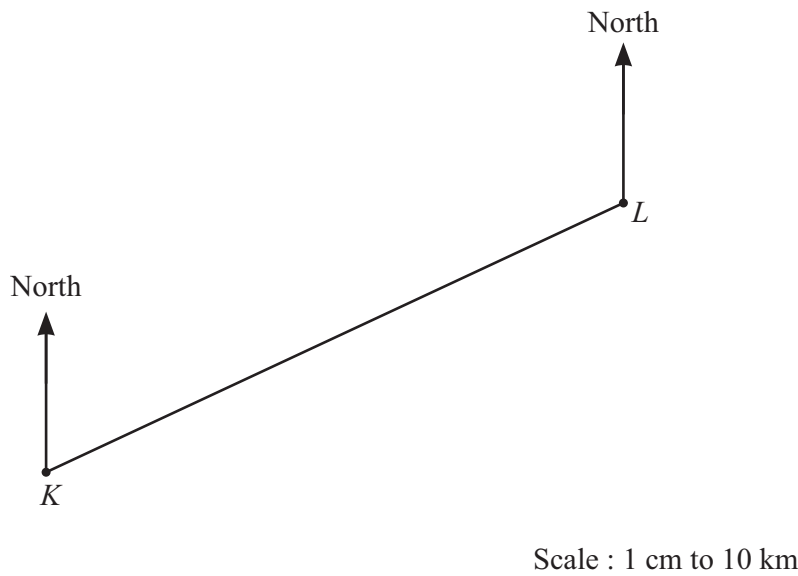
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154. Question | 0580 Oct-Nov 2024 P2 V3 Q4

- 4 The scale drawing shows the positions of town K and town L .
The scale is 1 cm represents 10 km.



- (a) Find the actual distance between town K and town L .

..... km [2]

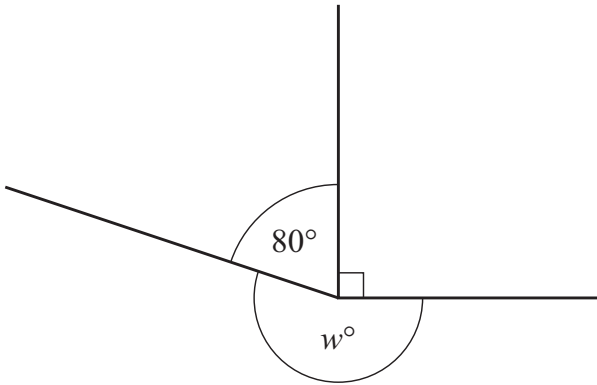
- (b) Measure the bearing of town L from town K .

..... [1]

155. Question | 0580 Oct-Nov 2024 P2 V3 Q6

6

..... [2]



NOT TO
SCALE

The diagram shows three lines meeting at a point.

Find the value of w .

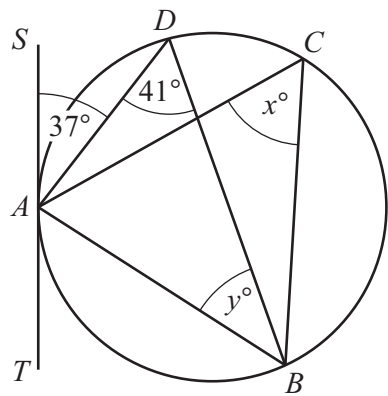
$w =$ [1]

156. Question | 0580 Oct-Nov 2024 P2 V3 Q9

9 Find the size of an interior angle of a regular 15-sided polygon.

..... [2]

14 (a)



NOT TO
SCALE

A, B, C and D lie on the circle.
 TAS is a tangent to the circle at A .

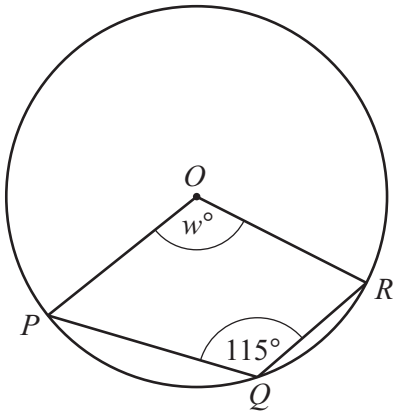
(i) Find the value of x .

$x = \dots\dots\dots$ [1]

(ii) Find the value of y .

$y = \dots\dots\dots$ [1]

(b)



NOT TO
SCALE

P, Q and R lie on the circle, centre O .
Find the value of w .

$w = \dots\dots\dots$ [2]

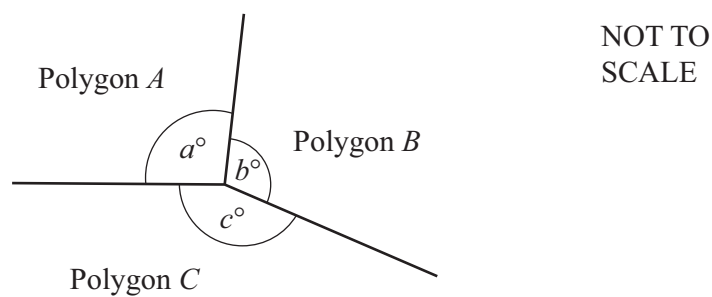
158. Question | 0580 Feb-March 2025 P2 V2 Q3

- 3
- A quadrilateral has one line of symmetry.
The diagonals of the quadrilateral cross at right angles.

Write down the mathematical name of the quadrilateral.

..... [1]

159. Question | 0580 Feb-March 2025 P2 V2 Q10

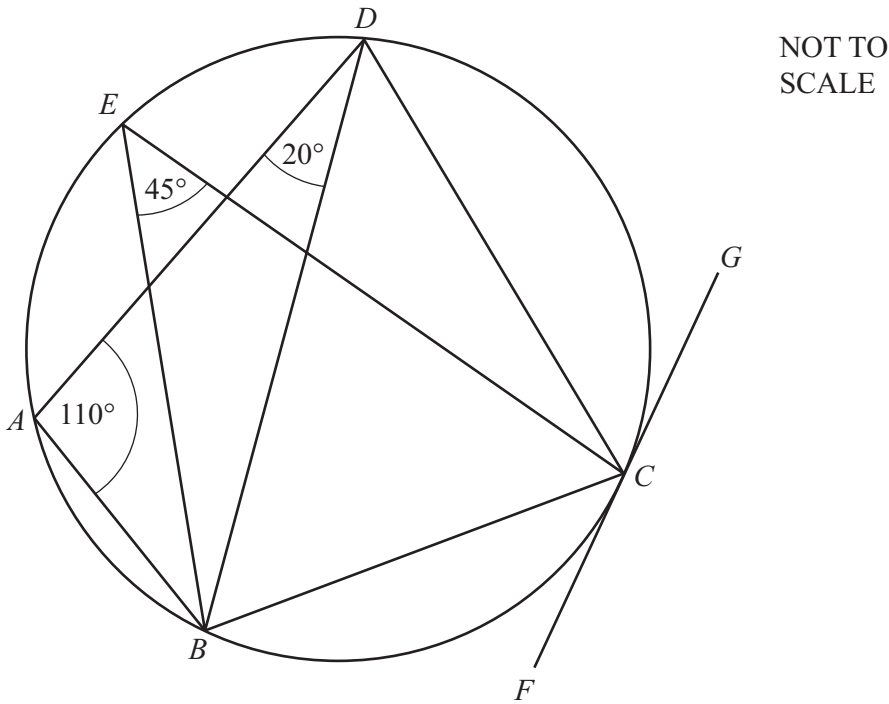
10

Three regular polygons A , B and C meet at a point.

The interior angles of the polygons are in the ratio $a : b : c = 3 : 4 : 5$.

Show that polygon C has twice the number of sides as polygon B .

14



A, B, C, D and E lie on a circle.
 FG is a tangent to the circle at C .
Angle $BAD = 110^\circ$, angle $ADB = 20^\circ$ and angle $BEC = 45^\circ$.

- (a) Find angle BCD .
Give a geometrical reason for your answer.

Angle $BCD = \dots\dots\dots$ because $\dots\dots\dots$
 $\dots\dots\dots$ [2]

- (b) (i) Find angle DBC .

Angle $DBC = \dots\dots\dots$ [2]

- (ii) Find angle DCG .

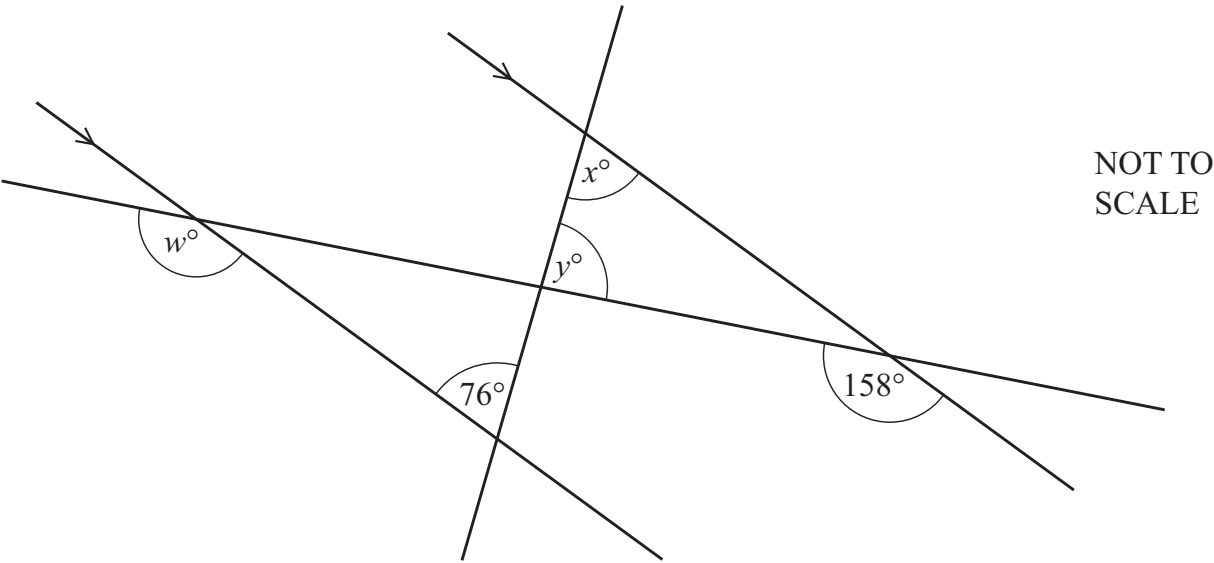
Angle $DCG = \dots\dots\dots$ [1]

160. Question part 2/2 | 0580 Feb-March 2025 P2 V2 Q14



161. Question | 0580 May-June 2025 P2 V1 Q2

2



The diagram shows two parallel lines intersecting two straight lines.

Find the values of w , x and y .

$w =$

$x =$

$y =$

[4]

162. Question | 0580 May-June 2025 P2 V1 Q5

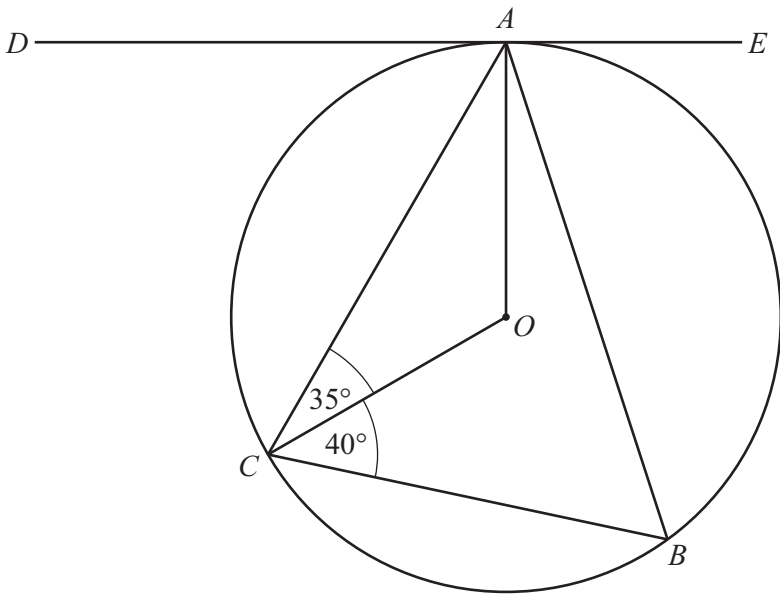
5 The interior angle of a regular polygon is 150° .

Find the number of sides of this polygon.

..... [2]

163. Question | 0580 May-June 2025 P2 V1 Q10

10



NOT TO
SCALE

A , B and C are three points on a circle, centre O .
 DE is a tangent to the circle at A .
Angle $ACO = 35^\circ$ and angle $BCO = 40^\circ$.

Find

(a) angle AOC

Angle $AOC = \dots\dots\dots$ [1]

(b) angle ABC

Angle $ABC = \dots\dots\dots$ [1]

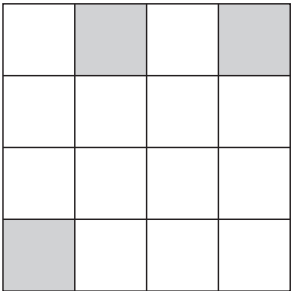
(c) angle DAC

Angle $DAC = \dots\dots\dots$ [1]

(d) angle OAB .

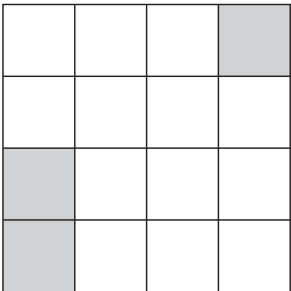
Angle $OAB = \dots\dots\dots$ [1]

1 (a)



Shade **one** more small square so that the diagram has one line of symmetry. [1]

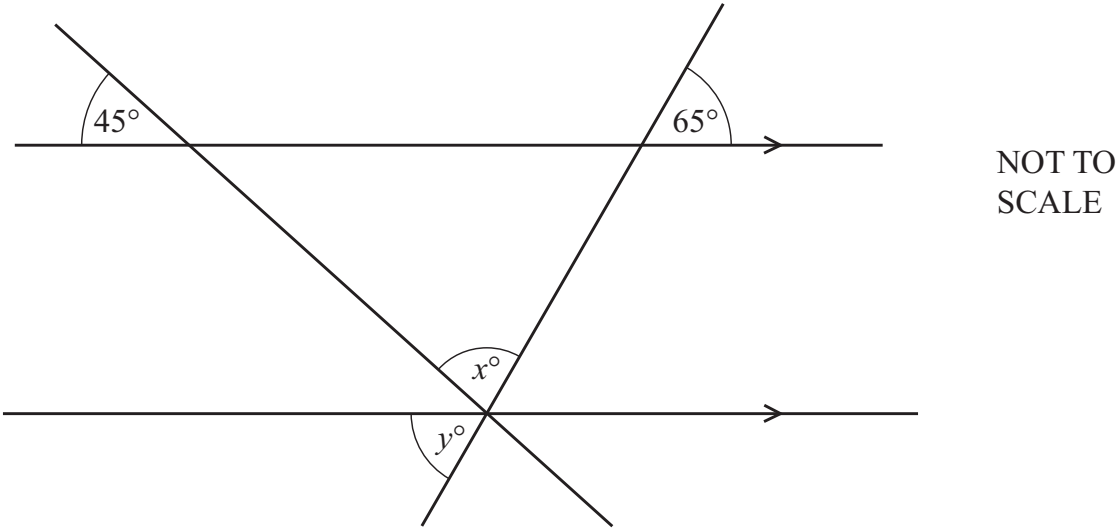
(b)



Shade **one** more small square so that the diagram has rotational symmetry of order 2. [1]

165. Question | 0580 May-June 2025 P2 V2 Q3

3



The diagram shows two straight lines intersecting two parallel lines.

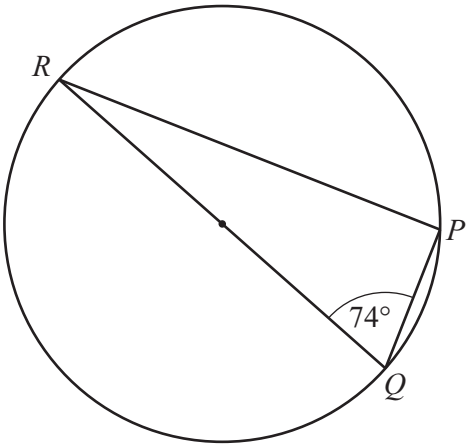
Find the value of x and the value of y .

$x =$

$y =$

[3]

12



NOT TO
SCALE

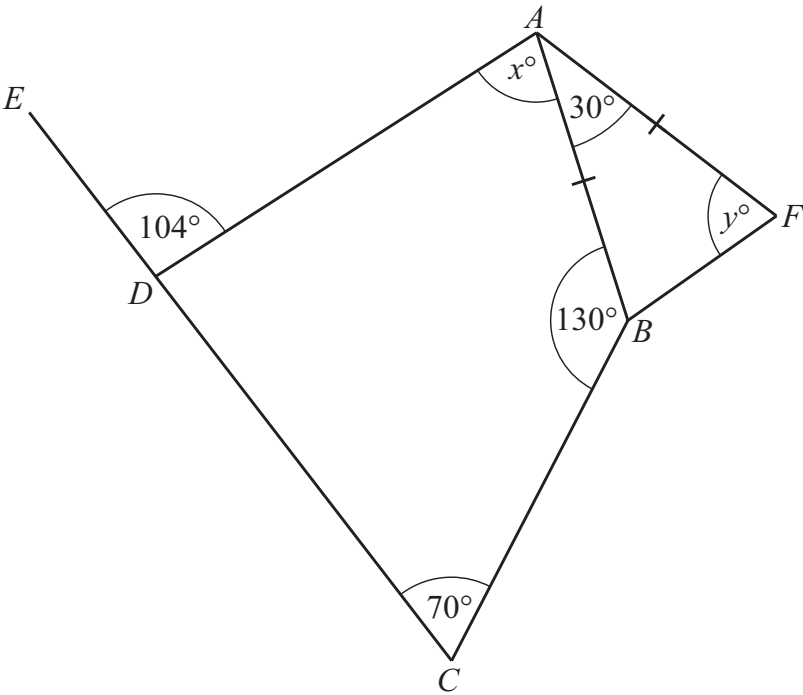
P , Q and R lie on a circle.
 QR is a diameter.

Find angle PRQ .
Give geometrical reasons for your answer.

Angle $PRQ = \dots\dots\dots$ because $\dots\dots\dots$

$\dots\dots\dots$ [2]

2



NOT TO
SCALE

ABCD is a quadrilateral.
CDE is a straight line.
AFB is an isosceles triangle.

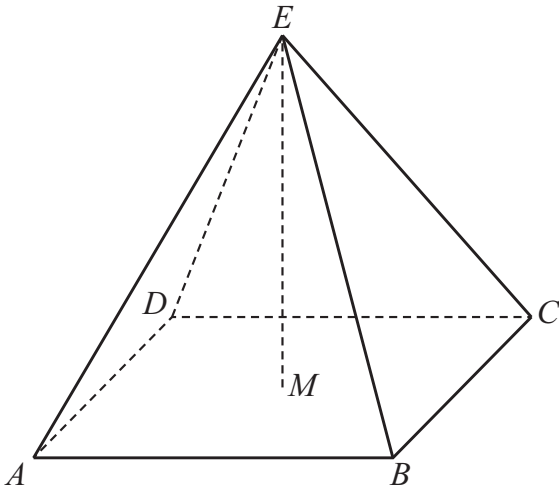
Find the value of *x* and the value of *y*.

x = ...

y = ...

[4]

3



NOT TO
SCALE

The diagram shows a pyramid $ABCDE$ with a square base.
 M is the centre of the square base.
 E is vertically above M .

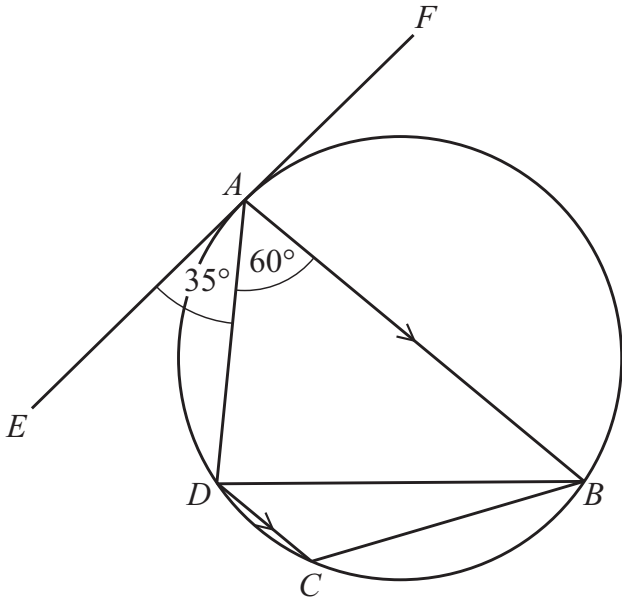
(a) Write down the number of planes of symmetry of this pyramid.

..... [1]

(b) Using two of the letters from A, B, C, D, E and M , complete the statement about the pyramid.

The axis of rotational symmetry passes through the points and [1]

13



NOT TO
SCALE

A, B, C and D are points on a circle.
EF is a tangent to the circle at A.
AB is parallel to DC.

(a) Find angle *DCB*, giving a geometrical reason.

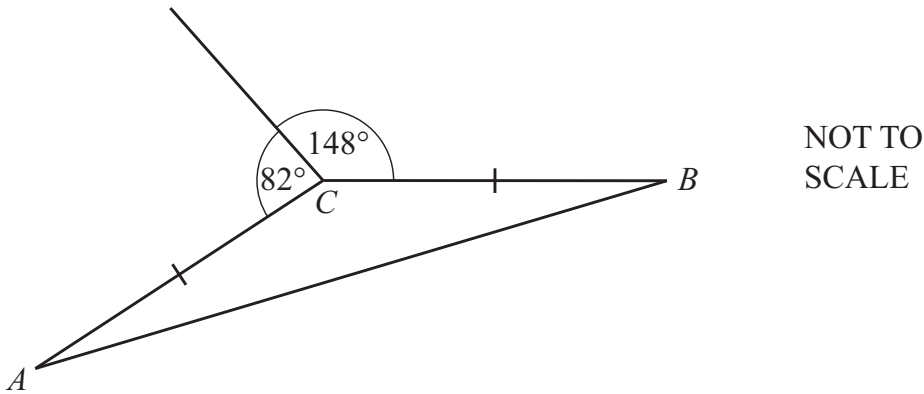
Angle *DCB* = ... because
..... [2]

(b) Find angle *DBC*.

Angle *DBC* = ... [2]

170. Question | 0580 Oct-Nov 2025 P2 V1 Q2

2



In the diagram, $AC = BC$.

Work out angle CAB .

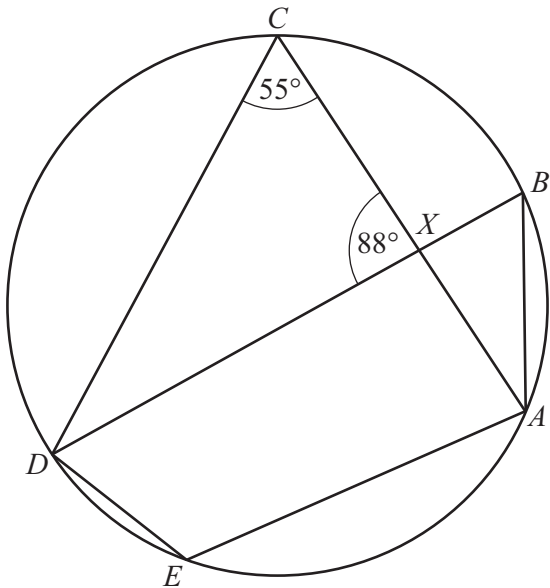
Angle $CAB = \dots\dots\dots$ [3]

171. Question | 0580 Oct-Nov 2025 P2 V1 Q3

3 Find the interior angle of a regular 20-sided polygon.

$\dots\dots\dots$ [2]

14



NOT TO
SCALE

A, B, C, D and E lie on the circle.
 AC and BD intersect at X .
Angle $ACD = 55^\circ$ and angle $CXD = 88^\circ$.

(a) Complete the statements, giving a geometrical reason in each part.

Angle $CDB = \dots\dots\dots$ because $\dots\dots\dots$

$\dots\dots\dots$

Angle $ABD = \dots\dots\dots$ because $\dots\dots\dots$

$\dots\dots\dots$

Angle $AED = \dots\dots\dots$ because $\dots\dots\dots$

$\dots\dots\dots$

[6]

172. Question part 2/2 | 0580 Oct-Nov 2025 P2 V1 Q14



(b) Triangle CXD is mathematically similar to triangle BXA .
 $DX = 8.0\text{ cm}$, $BX = 2.7\text{ cm}$ and $AX = 4.0\text{ cm}$.

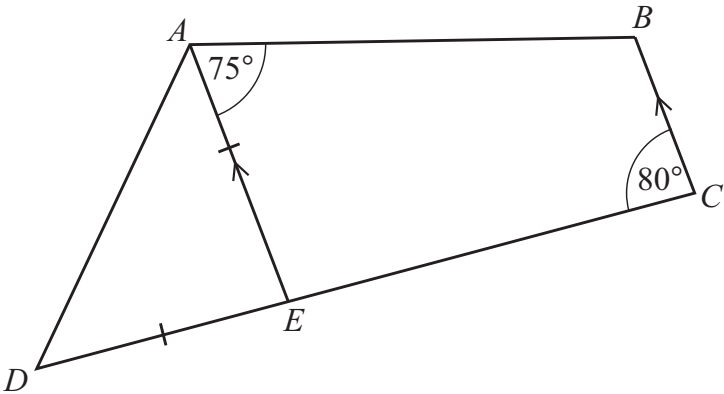
(i) Work out the length of CX .

$CX = \dots\dots\dots\text{ cm}$ [2]

(ii) Complete the statement.

Area of triangle CXD : area of triangle $BXA = \dots\dots\dots : \dots\dots\dots$ [1]

6



NOT TO
SCALE

$ABCD$ is a quadrilateral.
 E lies on CD and AE is parallel to BC .
 $EA = ED$.

Find

(a) angle ABC

Angle $ABC = \dots\dots\dots$ [1]

(b) angle AED

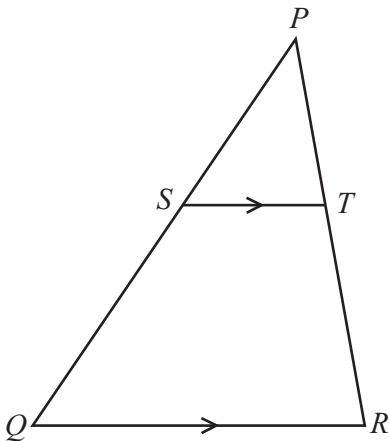
Angle $AED = \dots\dots\dots$ [1]

(c) angle DAB .

Angle $DAB = \dots\dots\dots$ [2]

174. Question | 0580 Oct-Nov 2025 P2 V2 Q11

11



NOT TO
SCALE

In the diagram, S lies on PQ and T lies on PR .
 ST is parallel to QR .

- (a) Explain why triangle PQR is mathematically similar to triangle PST .
Give a geometrical reason for each statement you make.

.....

.....

.....

..... [3]

- (b) $ST = 3\text{ cm}$, $QR = 9\text{ cm}$ and $PS = 5\text{ cm}$.

Work out PQ .

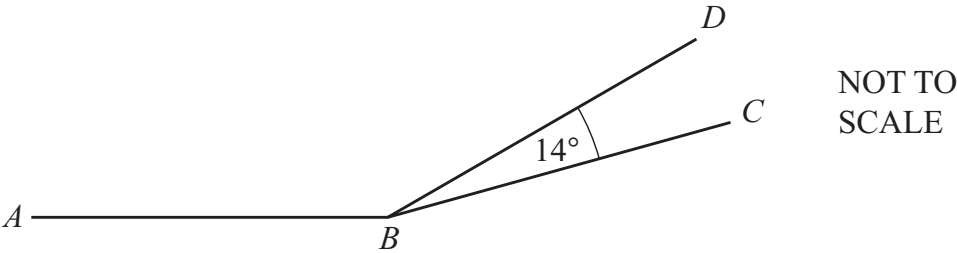
$PQ = \text{.....cm}$ [2]

- (c) The area of triangle PST is $2k\text{ cm}^2$.

Find, in terms of k , the area of quadrilateral $QRTS$.

..... cm^2 [2]

16



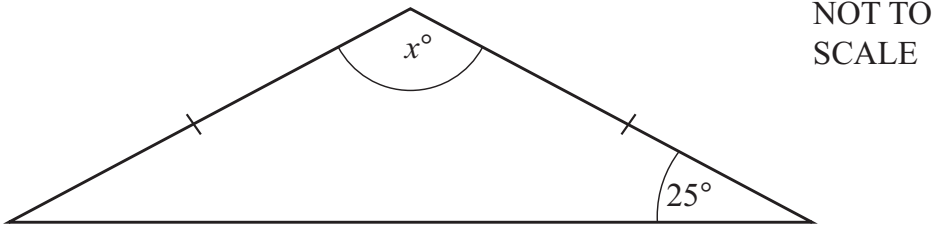
AB and BD are two sides of a regular 15-sided polygon.
 AB and BC are two sides of a regular n -sided polygon.
Angle $DBC = 14^\circ$.

Work out the value of n .

$n = \dots\dots\dots$ [4]

176. Question | 0580 Oct-Nov 2025 P2 V3 Q1

1



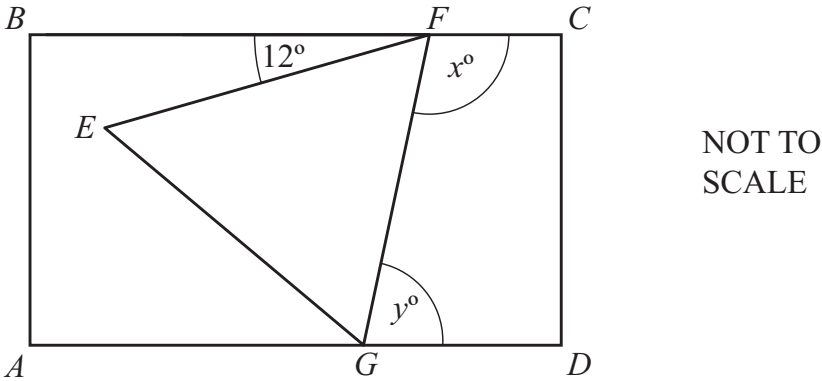
The diagram shows an isosceles triangle.

Find the value of x .

$x = \dots\dots\dots$ [2]

177. Question | 0580 Oct-Nov 2025 P2 V3 Q5

5

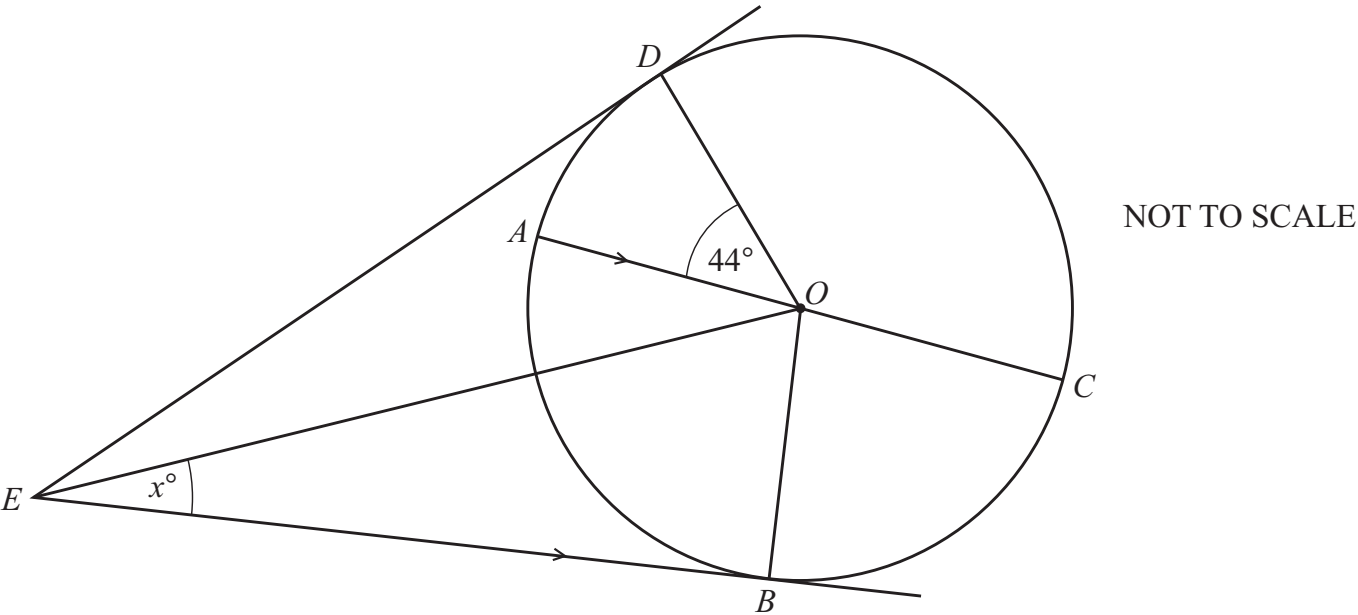


The diagram shows a rectangle $ABCD$.
 EFG is an equilateral triangle that touches the rectangle at F and G .

Find the value of x and the value of y .

$x = \dots\dots\dots$
 $y = \dots\dots\dots$ [2]

13

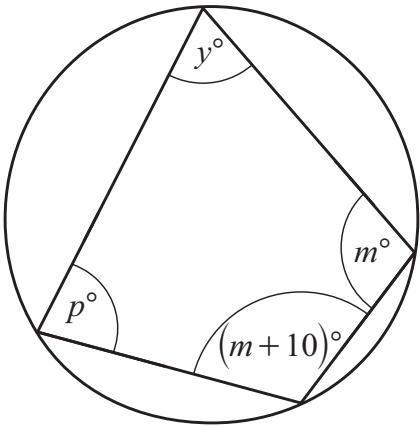


A, B, C and D are points on the circumference of a circle with centre O .
 ED and EB are tangents to the circle.
 AC is parallel to EB .
Angle $AOD = 44^\circ$.

Find the value of x .

$x = \dots\dots\dots$ [4]

21



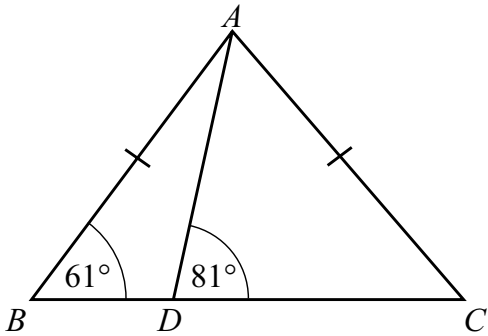
NOT TO
SCALE

The diagram shows a cyclic quadrilateral.
The ratio $p : m = 2 : 3$.

Find the value of y .

$y =$ [4]

4 The diagram shows two triangles, ABD and ADC .



NOT TO
SCALE

BDC is a straight line, $AB = AC$, angle $ABD = 61^\circ$ and angle $ADC = 81^\circ$.

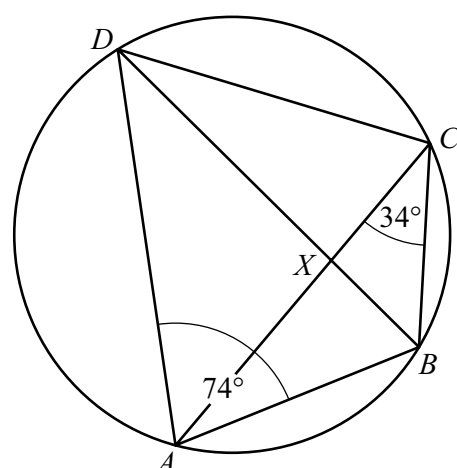
Work out angle DAC .

Angle $DAC = \dots\dots\dots$ [2]

13 Find the number of sides of a regular polygon with interior angle 162° .

$\dots\dots\dots$ [2]

17

NOT TO
SCALE

The diagram shows a cyclic quadrilateral $ABCD$.
 BD and AC intersect at X .

- (a) Angle $BAD = 74^\circ$ and angle $BCA = 34^\circ$.

Find

- (i) angle BDA

Angle $BDA = \dots\dots\dots$ [1]

- (ii) angle BCD

Angle $BCD = \dots\dots\dots$ [1]

- (iii) angle ABD .

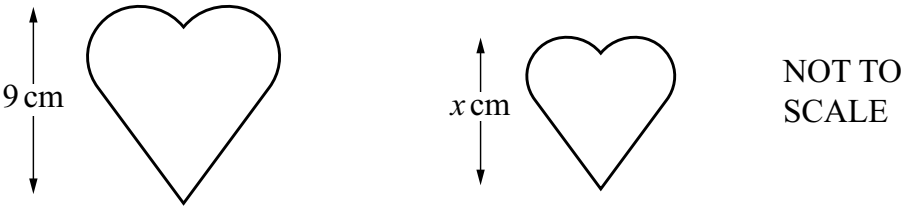
Angle $ABD = \dots\dots\dots$ [1]

- (b) In the diagram, triangle ADX is similar to triangle BCX .
 $BC = 4.5$ cm, $AD = 9$ cm and $CX = 3.3$ cm.

Work out XD .

$XD = \dots\dots\dots$ cm [2]

25



The two shapes are mathematically similar.
The area of the larger shape is 36 cm^2 and the area of the smaller shape is 25 cm^2 .
The height of the larger shape is 9 cm and the height of the smaller shape is x cm.

Find the value of x .

$x =$ [3]