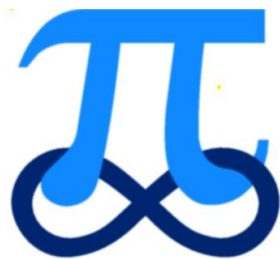


Edexcel GCSE Maths (1 – 9) Revision Pack

Geometry



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Q1.

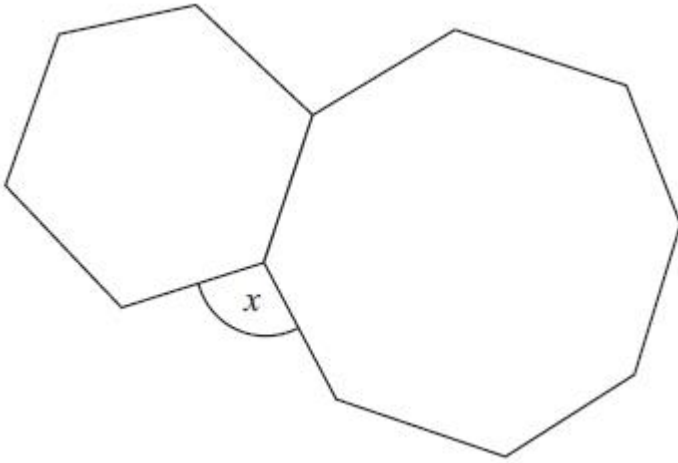


Diagram **NOT** accurately drawn

The diagram shows a regular hexagon and a regular octagon.

Calculate the size of the angle marked x .

You must show all your working.

.....^o

Q2.

Here is a circle.

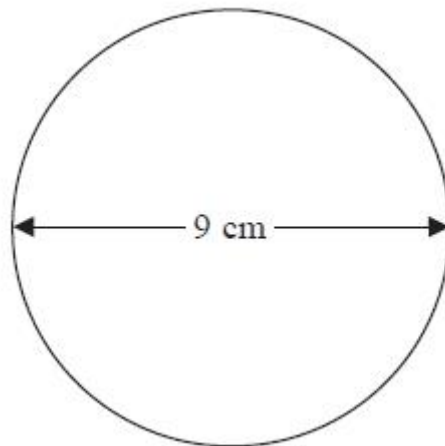


Diagram **NOT** accurately drawn

The diameter of the circle is 9 cm.

Work out the circumference of this circle.

Give your answer correct to 3 significant figures.

.....cm

Q3.

*

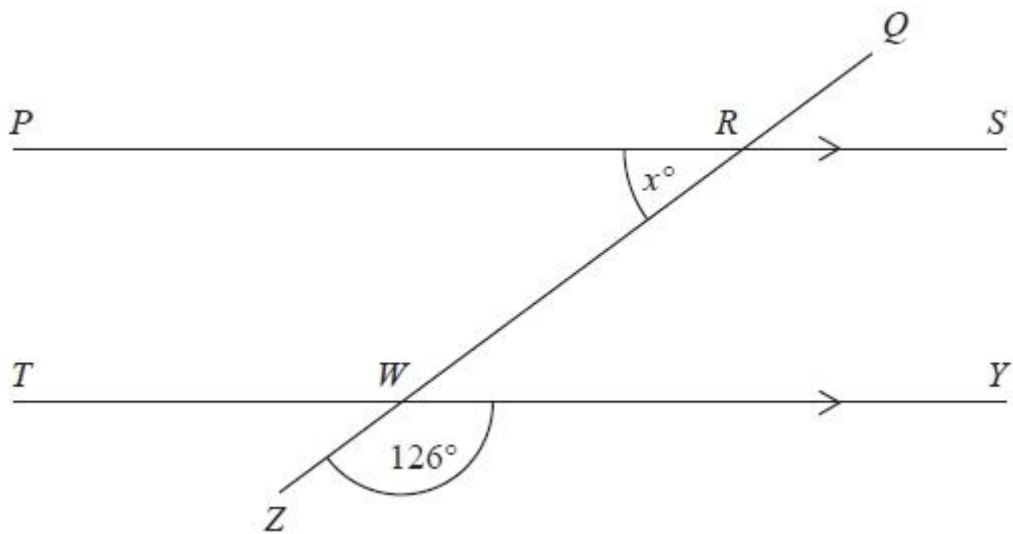


Diagram **NOT** accurately drawn

PRS and *TWY* are parallel straight lines.
QRWZ is a straight line.

Work out the value of x .
Give reasons for your answer.

Q4.

$ABCD$ is a parallelogram.

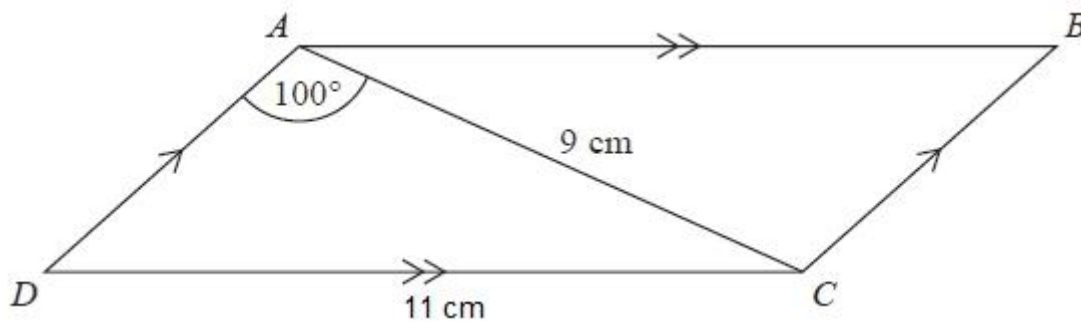


Diagram **NOT** accurately drawn

$$AC = 9\text{ cm}$$

$$DC = 11\text{ cm}$$

$$\text{Angle } DAC = 100^\circ$$

Calculate the area of the parallelogram.

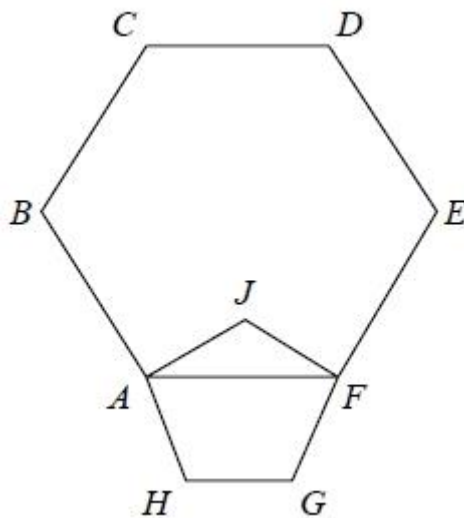
Give your answer correct to 3 significant figures.

..... cm^2

Q5.

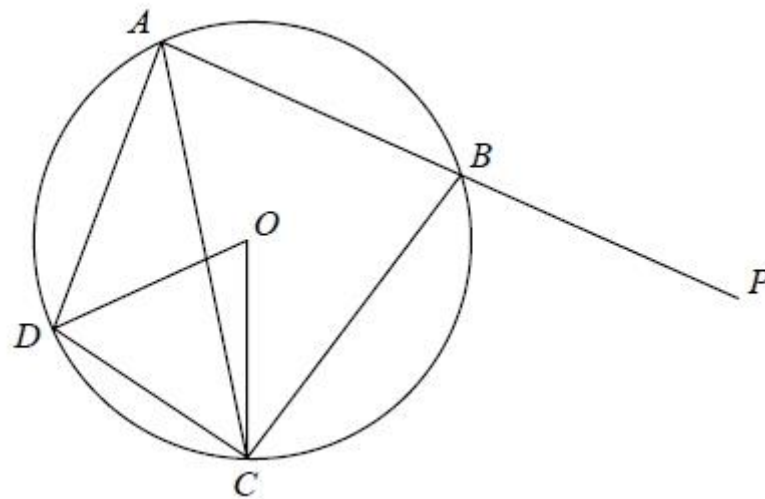
$ABCDEF$ is a regular hexagon.

$AJFGH$ is a regular pentagon.



Work out the size of angle BAJ .

Q6.



A, B, C and D are four points on a circle, centre O .

PBA is a straight line.

Angle $PBC = 100^\circ$.

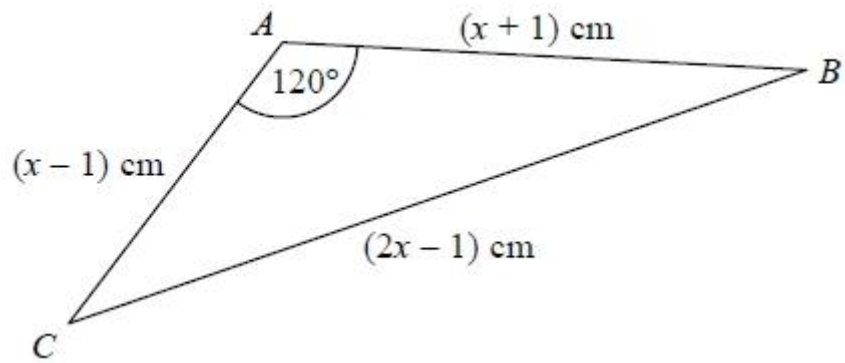
Angle $DAC = 23^\circ$.

Show that the size of angle $OCA = 10^\circ$

You must give a reason for each stage of your working.

Q7.

The diagram shows triangle ABC .



The area of triangle ABC is $k\sqrt{3}$ cm².

Find the exact value of k .

Q8.

The diagrams show two identical squares.

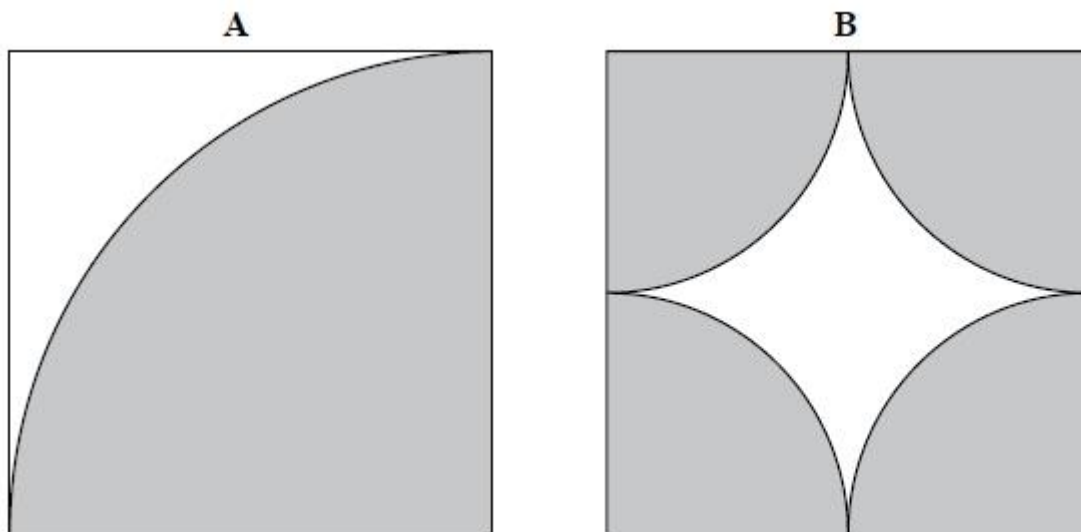
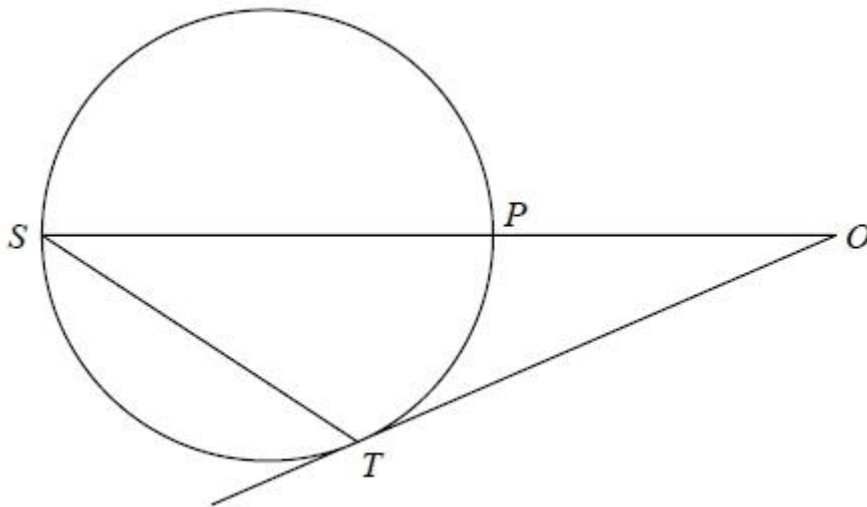


Diagram **A** shows a quarter of a circle shaded inside the square.

Diagram **B** shows four identical quarter circles shaded inside the square.

Show that the area of the region shaded in diagram **A** is equal to the area of the region shaded in diagram **B**.

Q9.



In the diagram, P , S and T are points on the circumference of a circle.

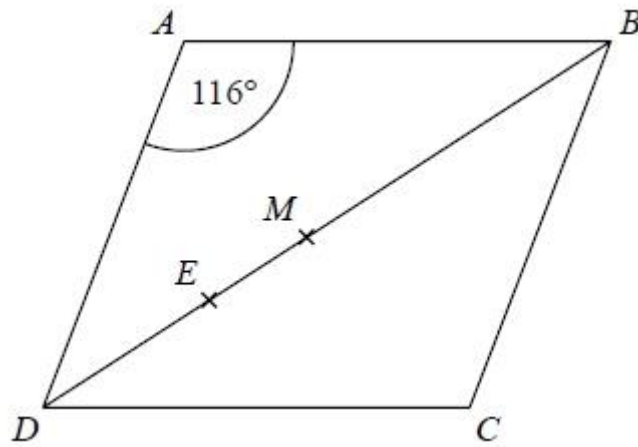
O is the point such that

OPS is a straight line.

OT is a tangent to the circle.

Prove that triangle OPT is similar to triangle OTS .

Q10.



$ABCD$ is a rhombus.

M is the midpoint of BD .

E is the point on BD such that $DE = CE$.

Calculate the size of angle MCE .

Q11.

Triangle ABC has a right angle at C .

Angle $BAC = 48^\circ$.

$AB = 9.3$ cm.

Calculate the length of BC .

Q12.

Here is part of a map showing the position of a port *A*.



B is a lighthouse 36 km from *A* on a bearing of 050°

- (a) (i) Construct a diagram to show the position of *B*.
Use a scale of 1 cm represents 4 km.
- (ii) Write down the bearing of *A* from *B*.

(3)

From the lighthouse at *B*, ships can be seen when they are within a range of 23 km of *B*.
A ship sails due East from *A*.

- (b) Show, **by calculation**, that on this course this ship will not be seen from the lighthouse at *B*.
You must not use a scale drawing.

(4)

Q13.

The diagram shows the positions of three turbines A , B and C .

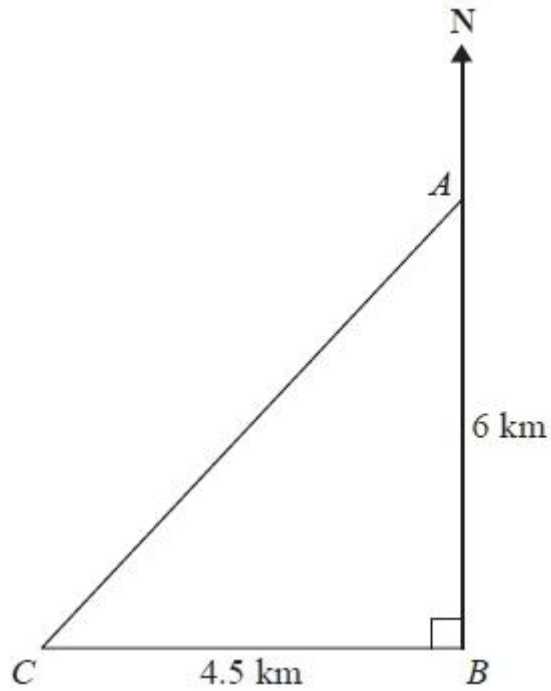


Diagram **NOT** accurately drawn

A is 6 km due north of turbine B .
 C is 4.5 km due west of turbine B .

(a) Calculate the distance AC .

..... km
(3)

(b) Calculate the bearing of C from A .
Give your answer correct to the nearest degree.

.....^o

Q14.

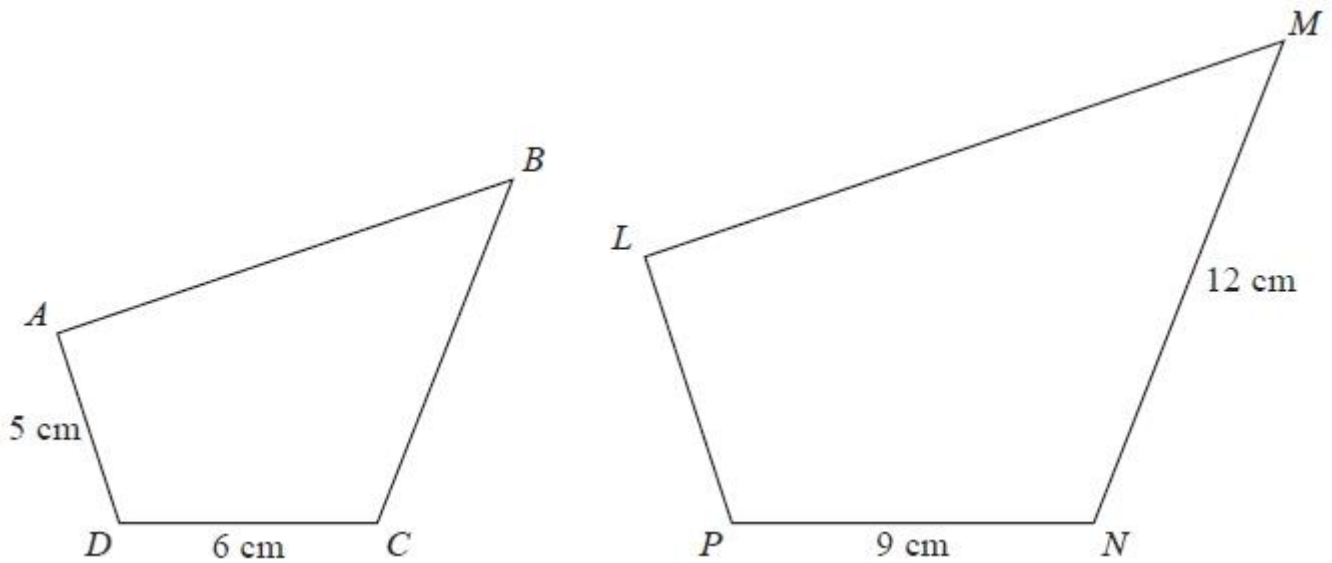


Diagram **NOT** accurately drawn

Quadrilaterals $ABCD$ and $LMNP$ are mathematically similar.

- Angle $A =$ angle L
- Angle $B =$ angle M
- Angle $C =$ angle N
- Angle $D =$ angle P

(a) Work out the length of LP .

.....cm
(2)

(b) Work out the length of BC .

.....cm

Q15.

The diagram represents a metal frame.

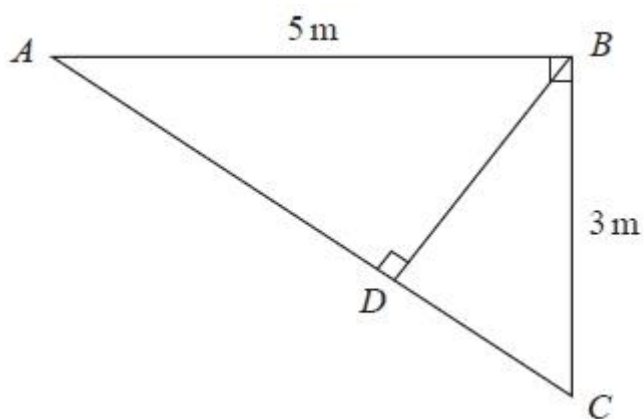


Diagram **NOT**
accurately drawn

The frame is made from four metal bars, AB , AC , BC and BD .

Angle $ABC = \text{angle } ADB = 90^\circ$

$AB = 5\text{ m}$

$BC = 3\text{ m}$

Work out the total length of the four metal bars of the frame.
Give your answer correct to 3 significant figures.

Q16.

* The diagram shows a ladder leaning against a vertical wall.

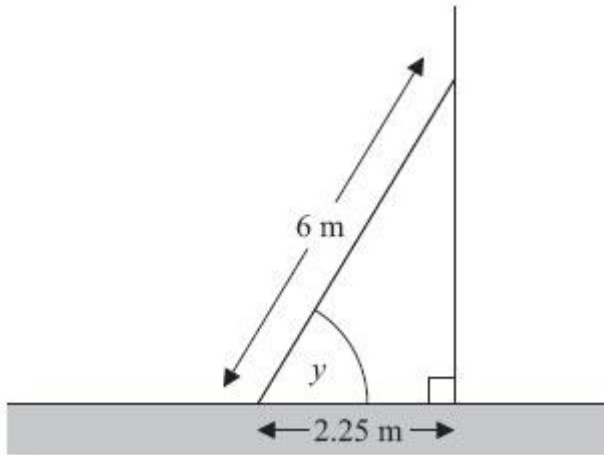


Diagram **NOT**
accurately drawn

The ladder stands on horizontal ground.

The length of the ladder is 6 m.

The bottom of the ladder is 2.25 m from the bottom of the wall.

A ladder is safe to use when the angle marked y is about 75° .

Is the ladder safe to use?

You must show all your working.

Q17.

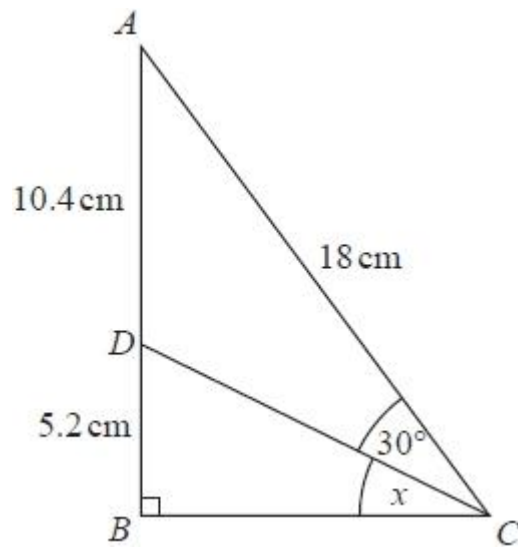


Diagram **NOT**
accurately drawn

ABC is a right-angled triangle.
 D is a point on AB .

Angle $ACD = 30^\circ$
 $AD = 10.4$ cm
 $DB = 5.2$ cm
 $AC = 18$ cm

Work out the size of the angle marked x .
Give your answer correct to 1 decimal place.

.....^o

Q18.

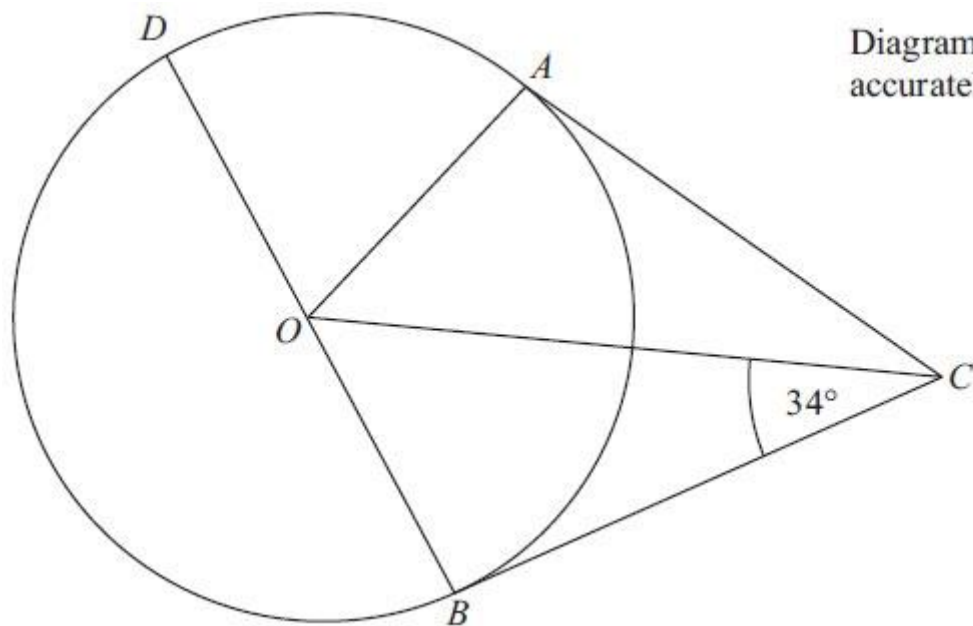


Diagram **NOT**
accurately drawn

A , B and D are points on the circumference of a circle, centre O .
 BOD is a diameter of the circle.
 BC and AC are tangents to the circle.
Angle $OCB = 34^\circ$.

Work out the size of angle DOA .

.....

Q19.

*

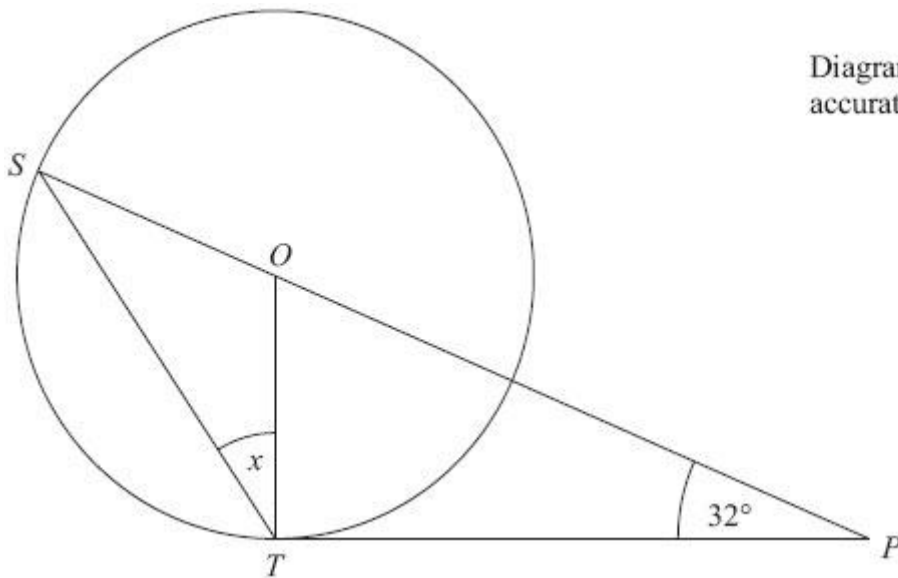


Diagram **NOT**
accurately drawn

S and T are points on the circumference of a circle, centre O .
 PT is a tangent to the circle.
 SOP is a straight line.

Angle $OPT = 32^\circ$

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

Q20.

*

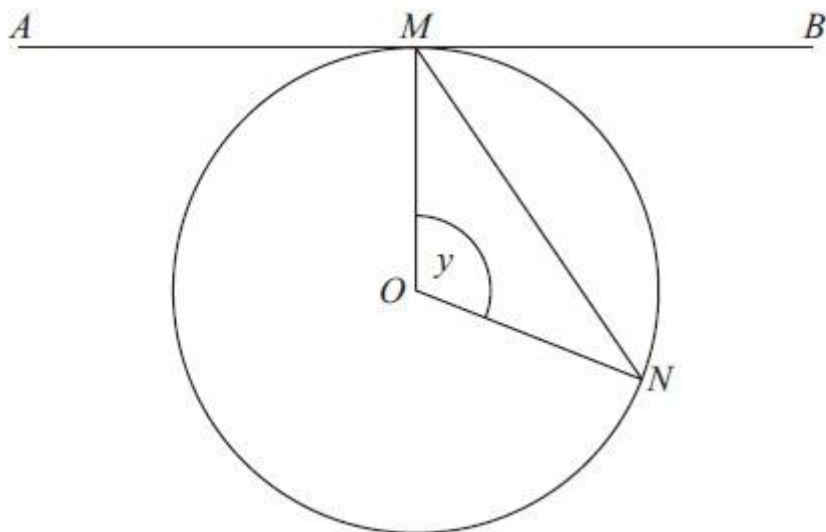


Diagram **NOT**
accurately drawn

M and N are two points on the circumference of a circle centre O .
The straight line AMB is the tangent to the circle at M .

Angle $MON = y$

Prove that angle $BMN = \frac{1}{2} y$

Q21.

*

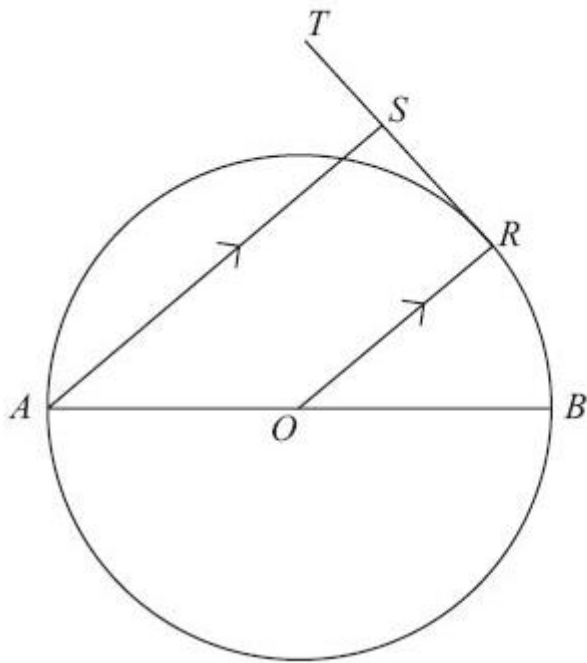


Diagram **NOT**
accurately drawn

AB is a diameter of a circle centre O .
The point R is on the circumference of the circle.
 RST is the tangent to the circle at R .
 AS is parallel to OR .

Prove that the size of angle AST is 90° .

Q22.

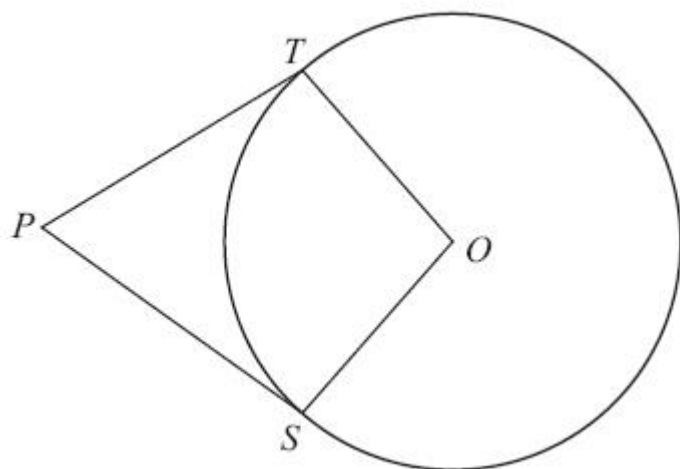


Diagram **NOT**
accurately drawn

S and *T* are points on the circumference of a circle, centre *O*.
PT and *PS* are tangents.
Angle $TPO = 24^\circ$.

Work out the size of angle *SOT*.

.....°

Q23.

*

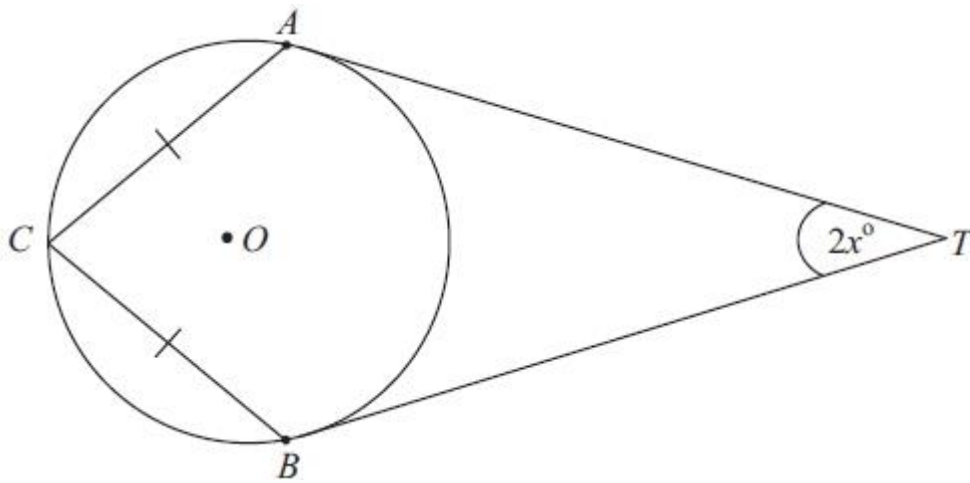


Diagram **NOT** accurately

drawn

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

TA and TB are tangents to the circle.

$CA = CB$.

Angle $ATB = 2x^\circ$.

Prove that angle $ACB = (90 - x)^\circ$.

Q24.

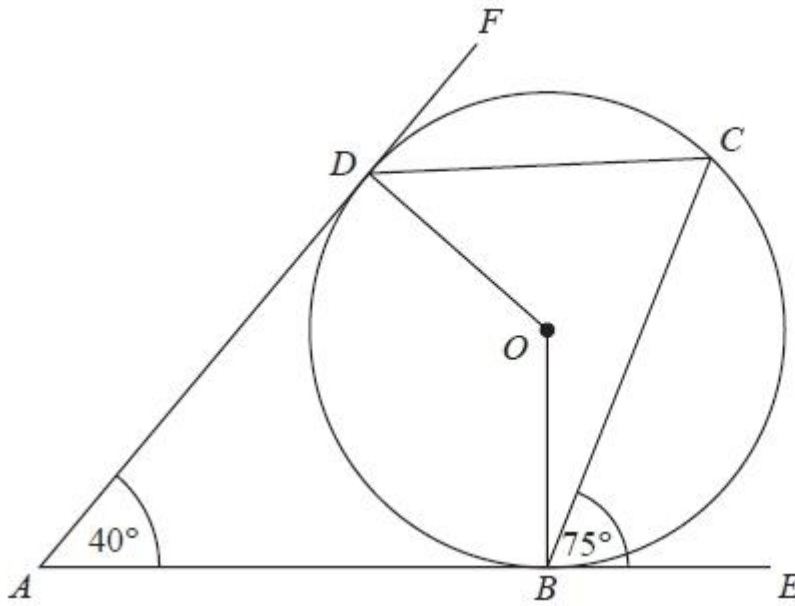


Diagram NOT
accurately drawn

B , C and D are points on the circumference of a circle, centre O .
 ABE and ADF are tangents to the circle.

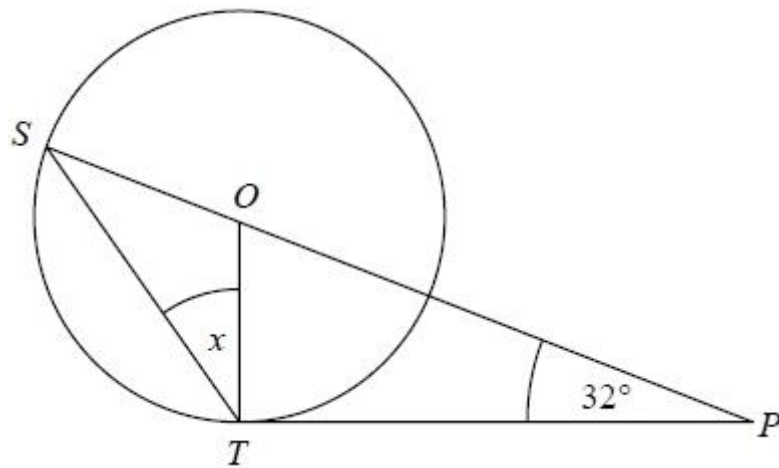
Angle $DAB = 40^\circ$

Angle $CBE = 75^\circ$

Work out the size of angle ODC .

.....^o

Q25.



S and T are points on the circumference of a circle, centre O .

PT is a tangent to the circle.

SOP is a straight line.

Angle $OPT = 32^\circ$

Work out the size of the angle marked x .

You must give a reason for each stage of your working.

Q26.

*

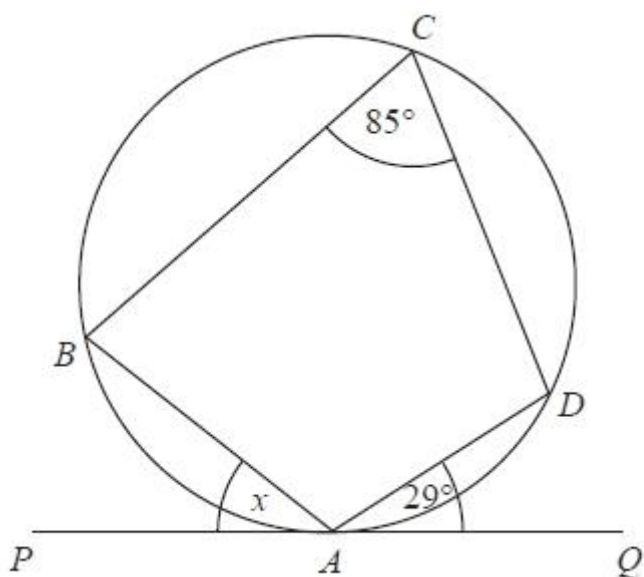


Diagram NOT
accurately drawn

In the diagram,

the points A , B , C and D are on the circumference of a circle

the line PAQ is a tangent to the circle

angle $DAQ = 29^\circ$

angle $BCD = 85^\circ$

Work out the size of the angle marked x .

Give a reason for each stage of your working.

Q27.

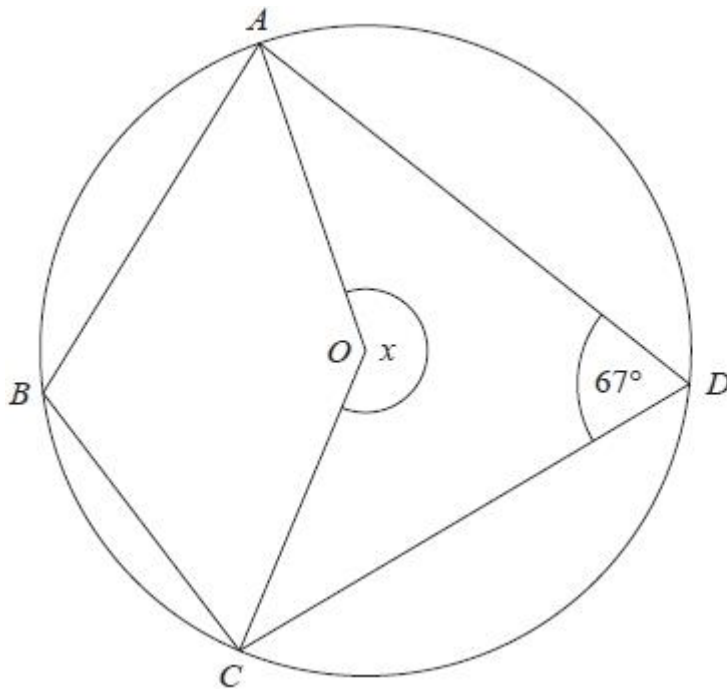


Diagram NOT
accurately drawn

A , B , C and D are points on the circumference of a circle, centre O .

Angle $ADC = 67^\circ$

Find the size of the angle marked x .

Q28.

*

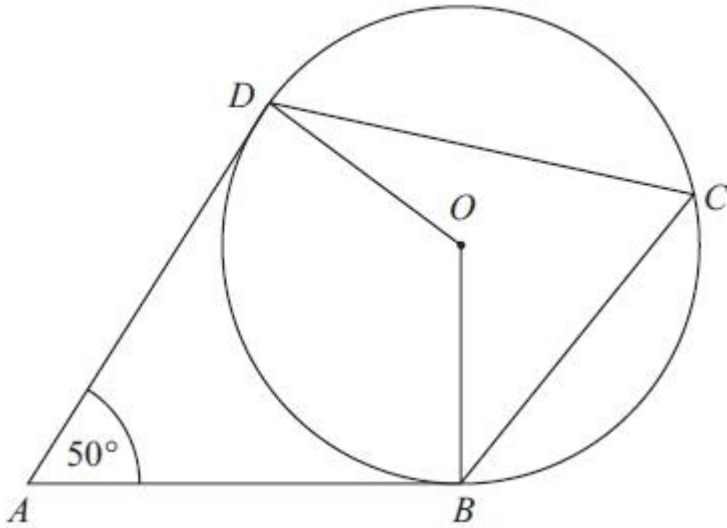


Diagram **NOT** accurately drawn

B , C and D are points on the circumference of a circle, centre O .
 AB and AD are tangents to the circle.

Angle $DAB = 50^\circ$

Work out the size of angle BCD .
Give a reason for each stage in your working.

Q29.

*

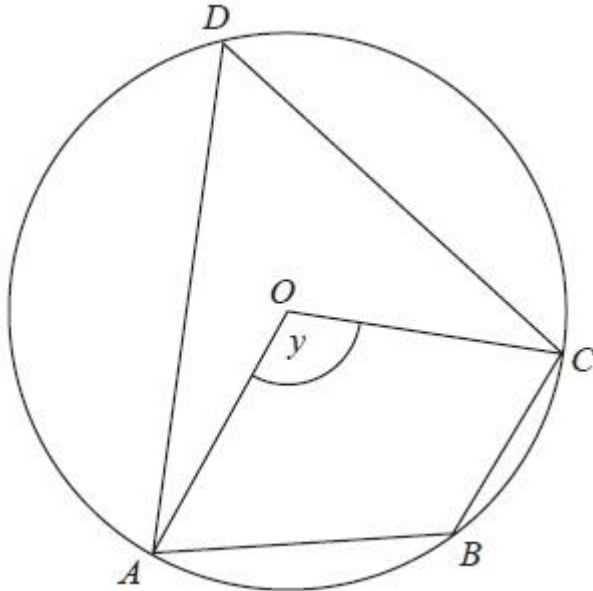


Diagram **NOT**
accurately drawn

A , B , C and D are points on the circumference of a circle, centre O .

Angle $AOC = y$.

Find the size of angle ABC in terms of y .

Give a reason for each stage of your working.

Q30.

*

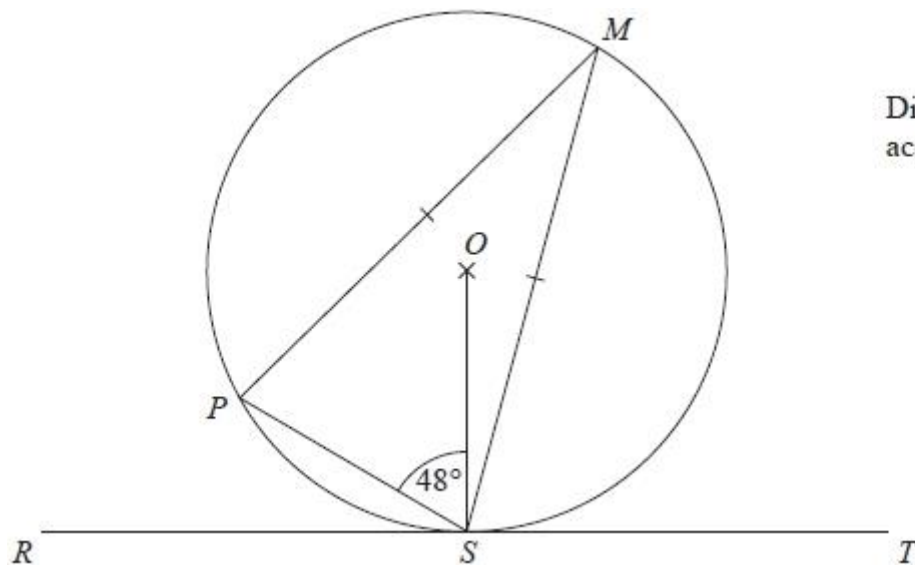


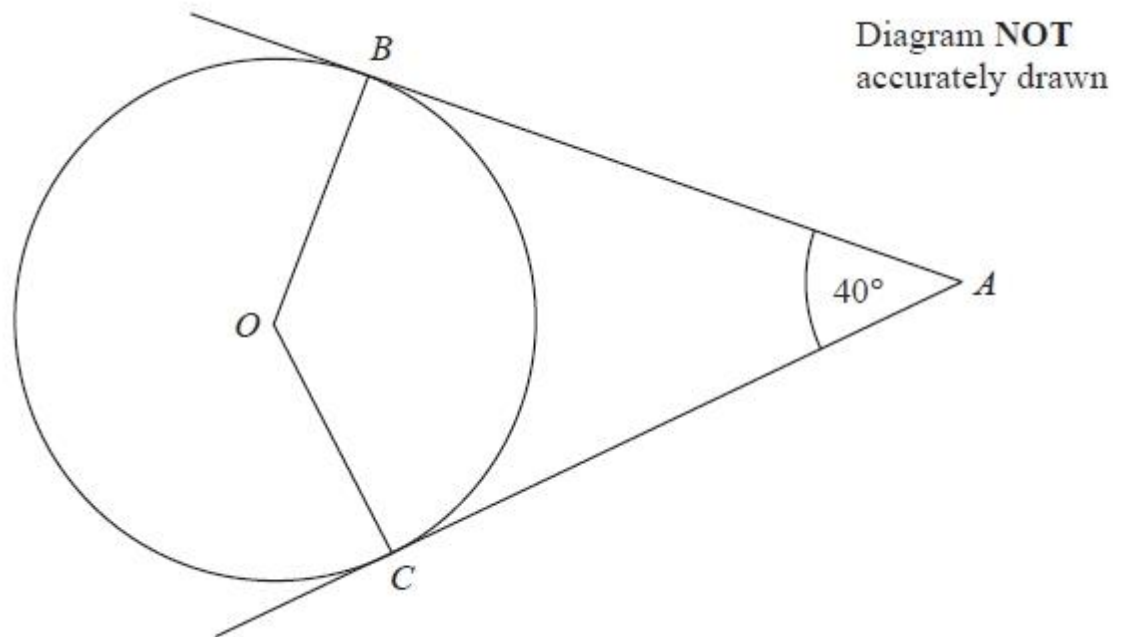
Diagram NOT
accurately drawn

P , M and S are points on a circle, centre O .
 RST is a tangent to the circle.

Angle $PSO = 48^\circ$
 $MP = MS$

Work out the size of angle MST .
Give reasons for each stage of your working.

Q31.



B and C are points on the circumference of a circle, centre O .
 AB and AC are tangents to the circle.
Angle $BAC = 40^\circ$.

Find the size of angle BCO .

Q32.

*

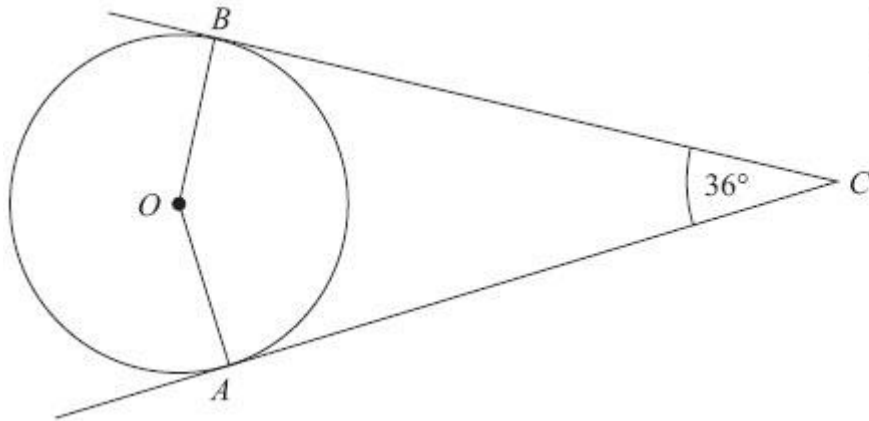


Diagram **NOT**
accurately drawn

A and B are points on the circumference of a circle, centre O .
 AC and BC are tangents to the circle.

Angle $ACB = 36^\circ$.

Find the size of angle OBA .
Give reasons for your answer.

Q33.

*

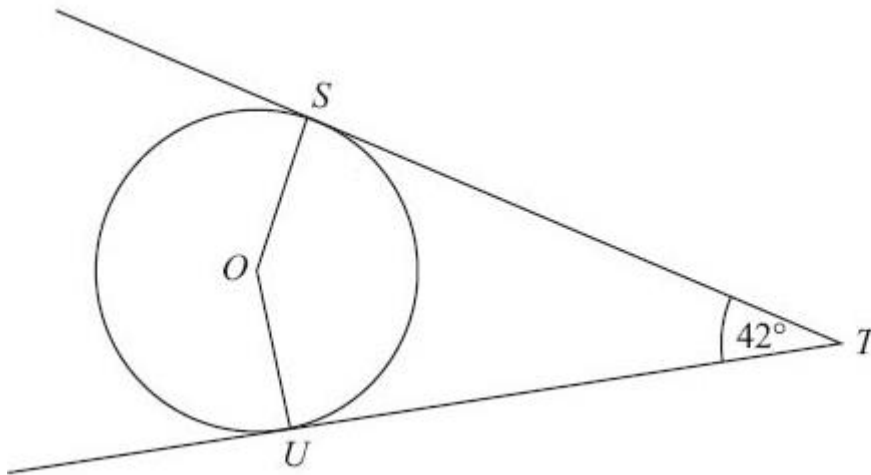


Diagram **NOT**
accurately drawn

S and U are points on the circumference of a circle, centre O .

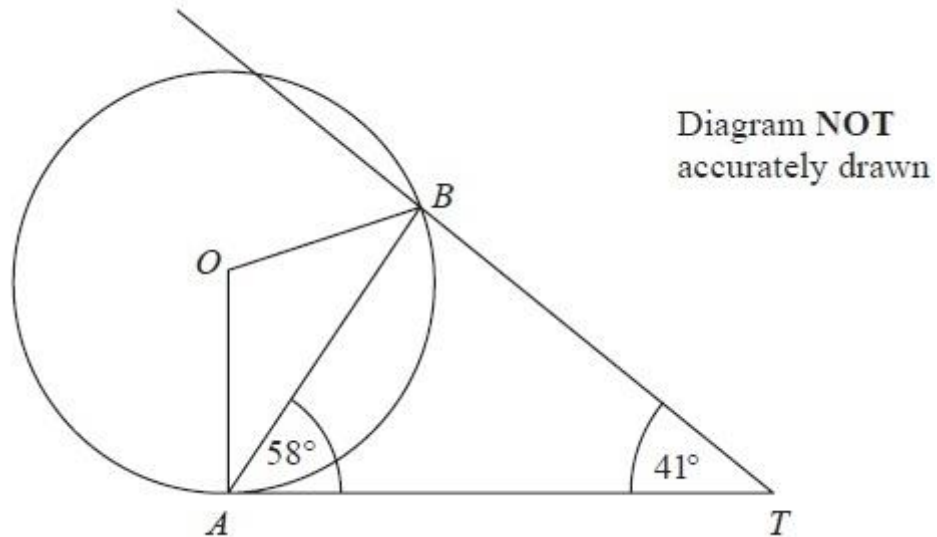
ST and UT are tangents to the circle.

Angle $STU = 42^\circ$

Work out the size of angle SOU .

Give reasons for your answer.

Q34.



A and B are points on the circumference of a circle, centre O .

AT is a tangent to the circle.

Angle $TAB = 58^\circ$.

Angle $BTA = 41^\circ$.

Calculate the size of angle OBT .

You must give reasons at each stage of your working.

Q35.

The diagram shows triangle LMN .

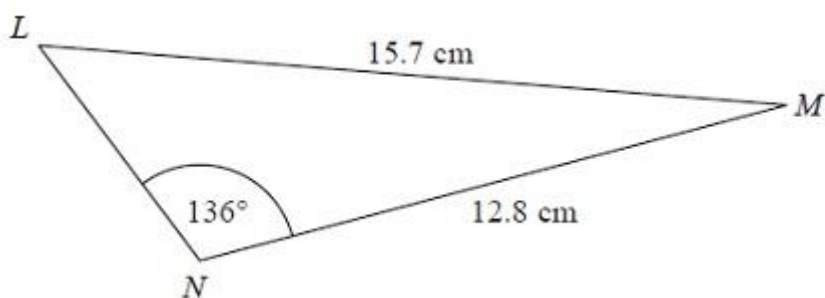


Diagram **NOT**
accurately drawn

Calculate the length of LN .

Give your answer correct to 3 significant figures.

..... cm

Q36.

ABC is a triangle.

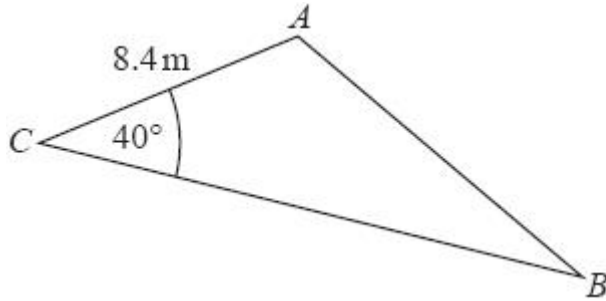


Diagram NOT
accurately drawn

$$AC = 8.4\text{m}$$

$$\text{Angle } ACB = 40^\circ$$

The area of the triangle = 100m^2 .

Work out the length of AB .

Give your answer correct to 3 significant figures.

You must show all your working.

..... m

Q37.

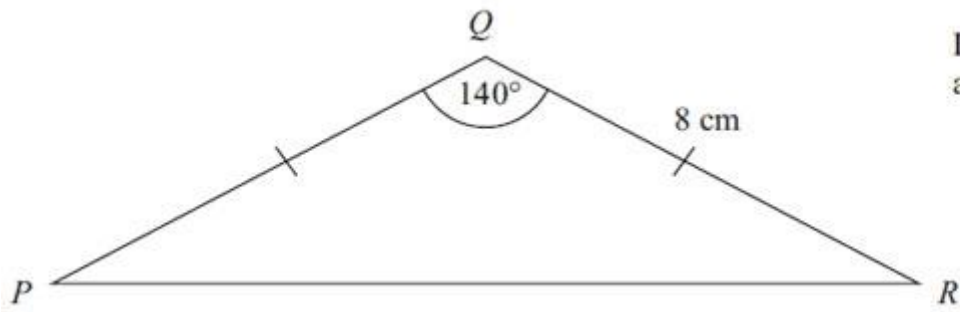


Diagram **NOT**
accurately drawn

Calculate the length of PR .

Give your answer correct to 3 significant figures.

.....

Q38.

Jerry wants to cover a triangular field, ABC , with fertiliser.

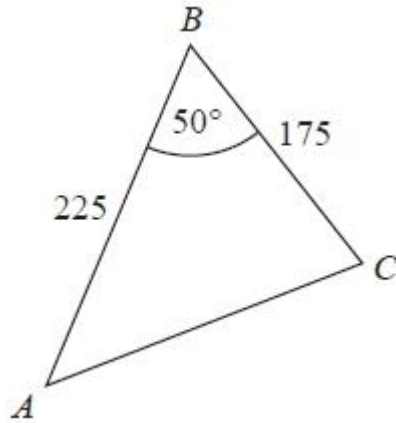


Diagram **NOT**
accurately drawn

Here are the measurements Jerry makes

- angle $ABC = 50^\circ$ correct to the nearest degree,
- $BA = 225$ m correct to the nearest 5 m,
- $BC = 175$ m correct to the nearest 5 m.

Work out the upper bound for the area of the field.
You must show your working.

Q39.

.....m²

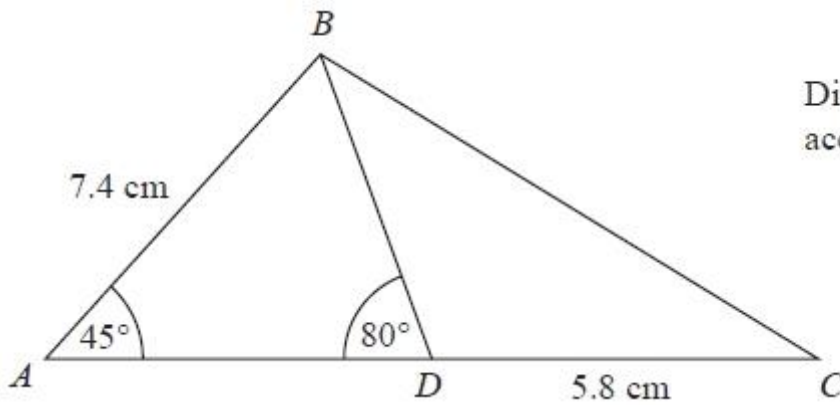


Diagram NOT
accurately drawn

- ABC* is a triangle.
- D* is a point on *AC*.
- Angle *BAD* = 45°
- Angle *ADB* = 80°
- AB* = 7.4 cm
- DC* = 5.8 cm

Work out the length of *BC*.
Give your answer correct to 3 significant figures.

..... cm

