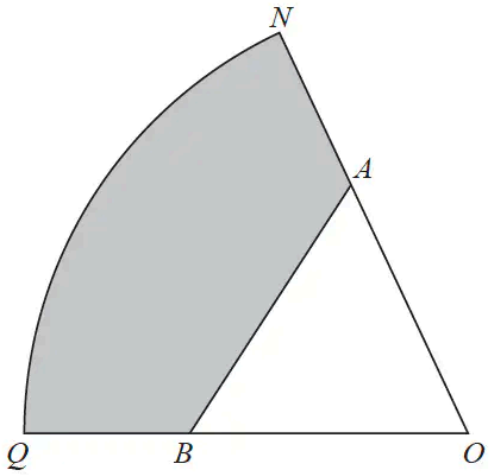
Name: _____

GCSE (1 - 9) Area of a Sector	Solutions:

These questions are compiled from *released* Pearson Edexcel GCSE maths exam papers
They contain exam questions from up until the ***Summer 2023*** exam series
More recent exam papers do exist but are withheld for mock exams
As new exam papers are released these worksheets will gradually be updated
The ***most current*** version of these worksheets will always be available at: kennethstafford.co.uk

Question	Where the question appeared
1	Edexcel, GCSE, Summer 2017, Paper 2H, Q17
2	Edexcel, GCSE, Autumn 2017, Paper 2H, Q20
3	Edexcel, GCSE, Autumn 2018, Paper 1H, Q17
4	Edexcel, GCSE, Summer 2019, Paper 2H, Q12
5	Edexcel, GCSE, Autumn 2019, Paper 3H, Q23
6	Edexcel, GCSE, Autumn 2020, Paper 1H, Q22
7	Edexcel, GCSE, November 2022, Paper 2F, Q21

1



ONQ is a sector of a circle with centre O and radius 11 cm.

A is the point on ON and B is the point on OQ such that AOB is an equilateral triangle of side 7 cm.

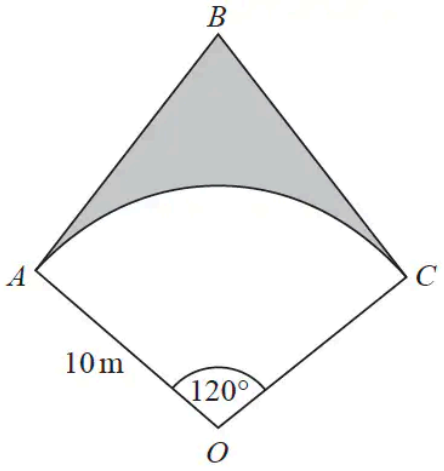
Calculate the area of the shaded region as a percentage of the area of the sector ONQ.
Give your answer correct to 1 decimal place.

.....%

(Total for Question 17 is 5 marks)

[Edexcel, GCSE, Summer 2017, Paper 2H, Q17]

2



OAC is a sector of a circle, centre O, radius 10 m.

BA is the tangent to the circle at point A.
BC is the tangent to the circle at point C.

Angle $AOC = 120°$

Calculate the area of the shaded region.
Give your answer correct to 3 significant figures.

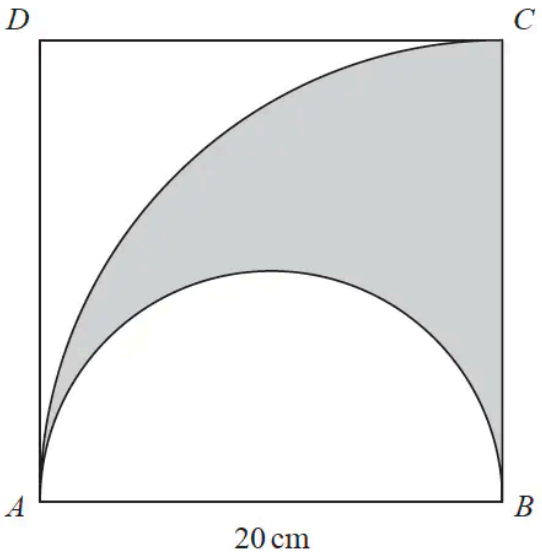
..... m^2

(Total for Question 20 is 5 marks)

[Edexcel, GCSE, Autumn 2017, Paper 2H, Q20]

3

The diagram shows a square $ABCD$ with sides of length 20 cm.
It also shows a semicircle and an arc of a circle.



AB is the diameter of the semicircle.
AC is an arc of a circle with centre B.

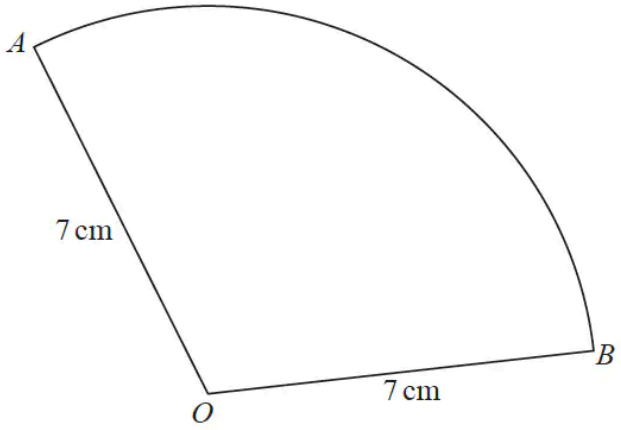
Show that $\dfrac{\text{area of shaded region}}{\text{area of square}} = \dfrac{\pi}{8}$

(Total for Question 7 is 4 marks)

[Edexcel, GCSE, Autumn 2018, Paper 1H, Q17]

4

OAB is a sector of a circle with centre *O* and radius 7 cm.



The area of the sector is 40 cm^2

Calculate the perimeter of the sector.
Give your answer correct to 3 significant figures.

..... cm

(Total for Question 12 is 4 marks)

[Edexcel, GCSE, Summer 2019, Paper 2H, Q12]

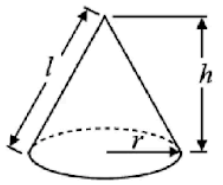
5

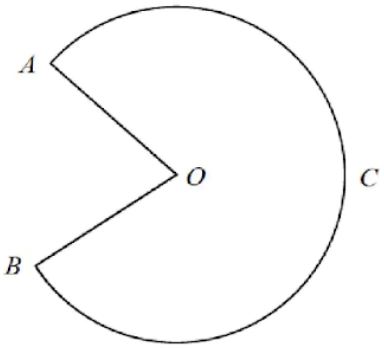
The diagram shows a sector $OACB$ of a circle with centre O.
The point C is the midpoint of the arc AB.

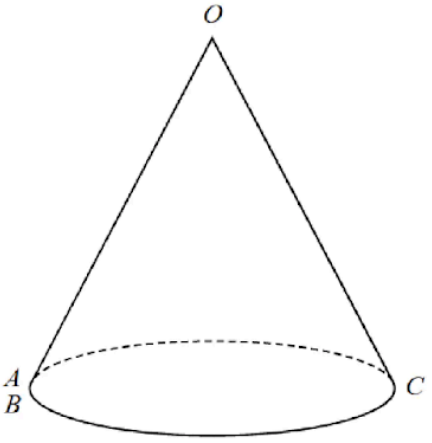
The diagram also shows a hollow cone with vertex O.
The cone is formed by joining OA and OB.

Volume of cone $= \frac{1}{3}\pi r^2 h$

Curved surface area of cone $= \pi rl$







The cone has volume 56.8 cm^3 and height 3.6 cm.

Calculate the size of angle AOB of sector $OACB$.
Give your answer correct to 3 significant figures.
You must show all your working.

.....°

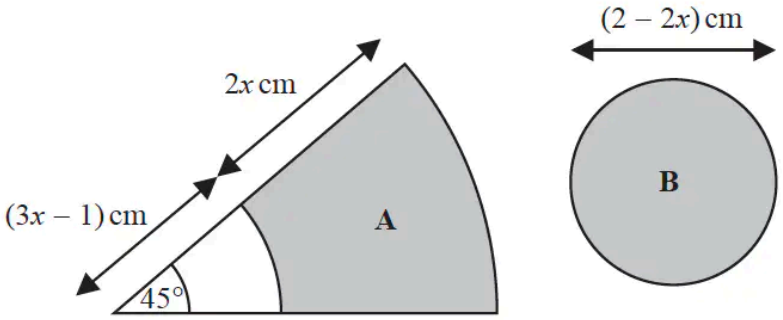
(Total for Question 23 is 5 marks)

[Edexcel, GCSE, Autumn 2019, Paper 3H, Q23]

6

The diagram shows two shaded shapes, **A** and **B**.

Shape **A** is formed by removing a sector of a circle with radius $(3x - 1)$ cm from a sector of the circle with radius $(5x - 1)$ cm.
Shape **B** is a circle of diameter $(2 - 2x)$ cm.



The area of shape **A** is equal to the area of shape **B**.

Find the value of x.
You must show all your working.

.....

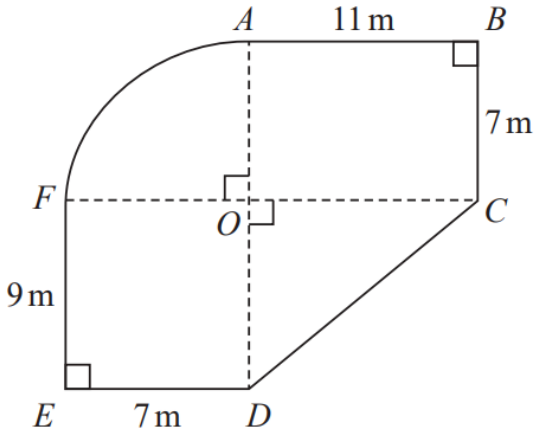
(Total for Question 22 is 5 marks)

[Edexcel, GCSE, Autumn 2020, Paper 1H, Q22]

7

The diagram shows a plan of Jason's garden.

ABCO and *DEFO* are rectangles.
CDO is a right-angled triangle.
AFO is a sector of a circle with centre *O* and angle $AOF = 90°$



Jason is going to cover his garden with grass seed.
Each bag of grass seed covers $14\,m^2$ of garden.
Each bag of grass seed costs £10.95

Work out how much it will cost Jason to buy all the bags of grass seed he needs.

£.....

(Total for Question 21 is 5 marks)

[Edexcel, GCSE, November 2022, Paper 2F, Q21]