Name: SOLUTIONS

GCSE (1 - 9)

Area of Compound Shapes

Buy me a coffee

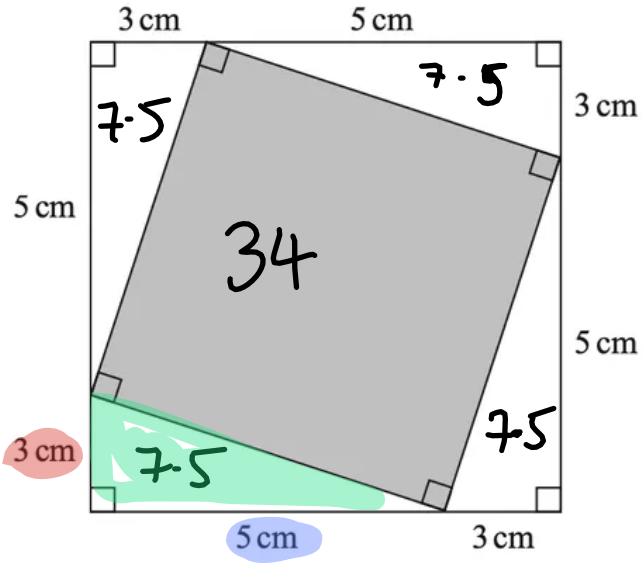
Solutions by
Kenneth Stafford
MATHS TUTOR
ken@kennethstafford.co.uk

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

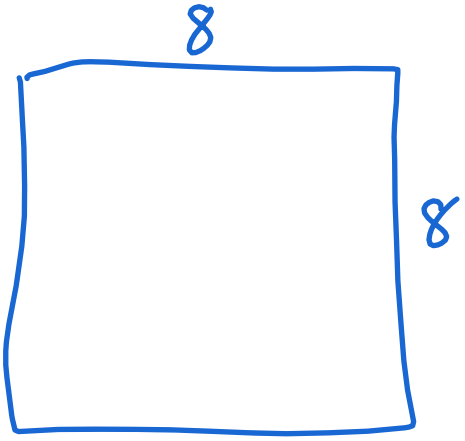
Question	Where the question appeared
1	Edexcel, GCSE, Autumn 2021, Paper 3F, Q19
2	Edexcel, GCSE, Autumn 2021, Paper 3F, Q27
3	Edexcel, GCSE, Autumn 2020, Paper 2F, Q27
4	Edexcel, GCSE, Autumn 2018, Paper 1F, Q26
5	Edexcel, GCSE, Autumn 2017, Paper 1F, Q26

1

This diagram shows two squares.



Work out the area of the square shown shaded in the diagram.



Area = $8 \times 8 = 64\text{cm}^2$

$64 - (7.5 \times 4)$

$= 34$



Area = $\frac{3 \times 5}{2} = 7.5$

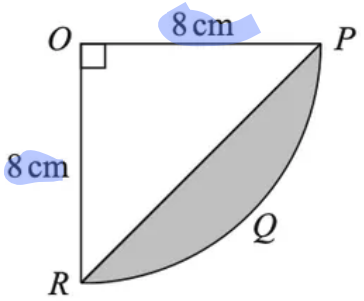
34cm^2

(Total for Question 19 is 4 marks)

[Edexcel, GCSE, Autumn 2021, Paper 3F, Q19]

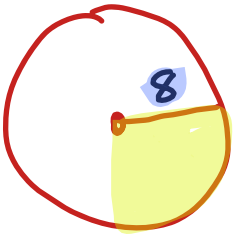
2

The diagram shows a sector $OPQR$ of a circle, centre O and radius 8 cm.

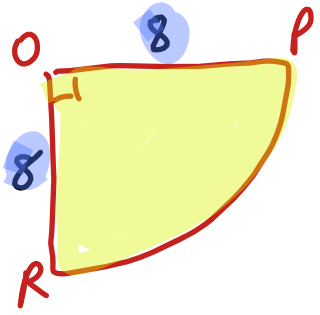


OPR is a triangle.

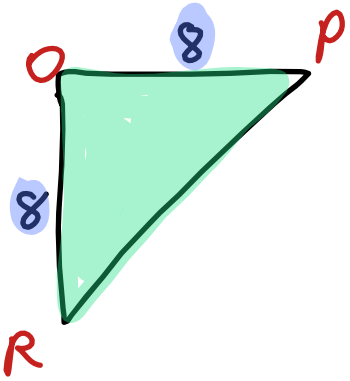
Work out the area of the shaded segment PQR.
Give your answer correct to 3 significant figures.



Area = 64π



$64\pi \div 8 =$ $16\pi \text{ cm}^2$



$\frac{8 \times 8}{2} = \frac{64}{2} =$ 32 cm^2

$16\pi - 32 = 18.3$

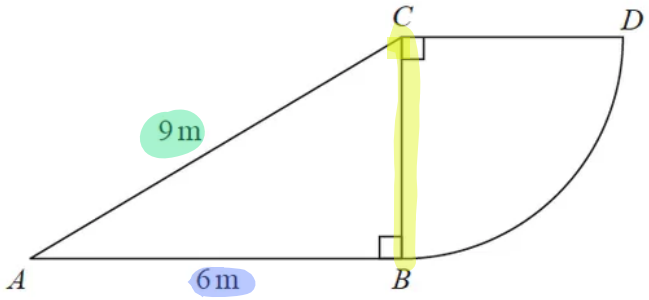
..... cm^2

(Total for Question 27 is 4 marks)

[Edexcel, GCSE, Autumn 2021, Paper 3F, Q27]

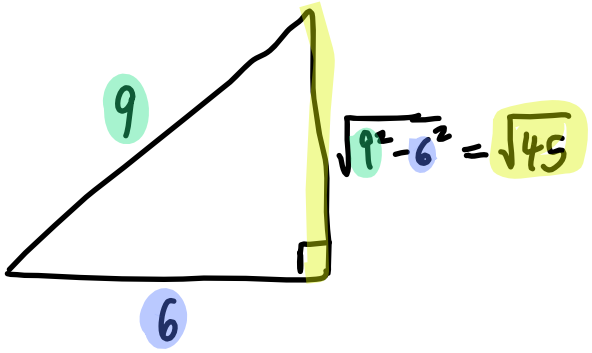
3

The diagram shows a right-angled triangle and a quarter circle.

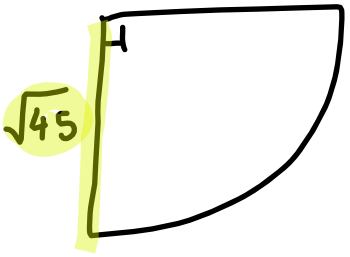


The right-angled triangle ABC has angle $ABC = 90°$
The quarter circle has centre C and radius CB.

Work out the area of the quarter circle.
Give your answer correct to 3 significant figures.
You must show all your working.



Quarter of circle



$\text{Area} = \frac{\pi r^2}{4} = \frac{\pi \times 45}{4} = 35.34$

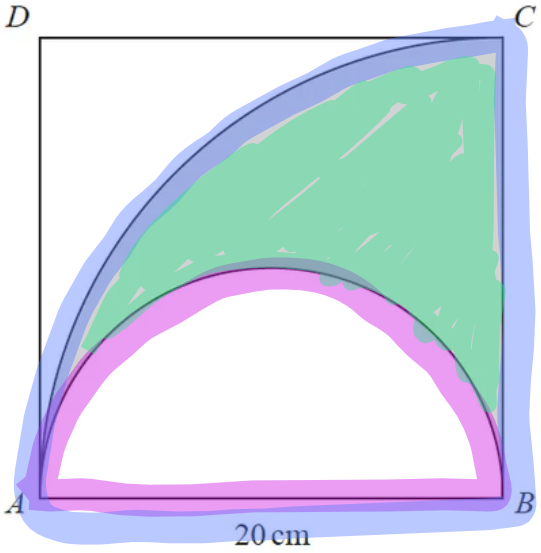
35.3 ..... m^2

(Total for Question 27 is 4 marks)

[Edexcel, GCSE, Autumn 2020, Paper 2F, Q27]

4

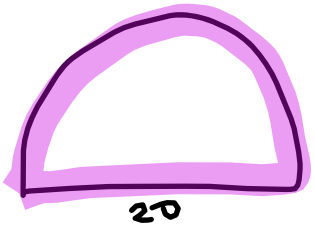
The diagram shows a square $ABCD$ with sides of length 20 cm.
It also shows a semicircle and an arc of a circle.



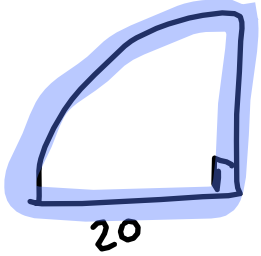
AB is the diameter of the semicircle.
AC is an arc of a circle with centre B.

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

Area of square $= 20 \times 20 = 400$



Area of semicircle $= \dfrac{\pi \times 10^2}{2} = \dfrac{100\pi}{2} = 50\pi$



Area of sector $= \dfrac{\pi \times 20^2}{4} = \dfrac{400\pi}{4} = 100\pi$

Shaded Region $= 100\pi - 50\pi = 50\pi$

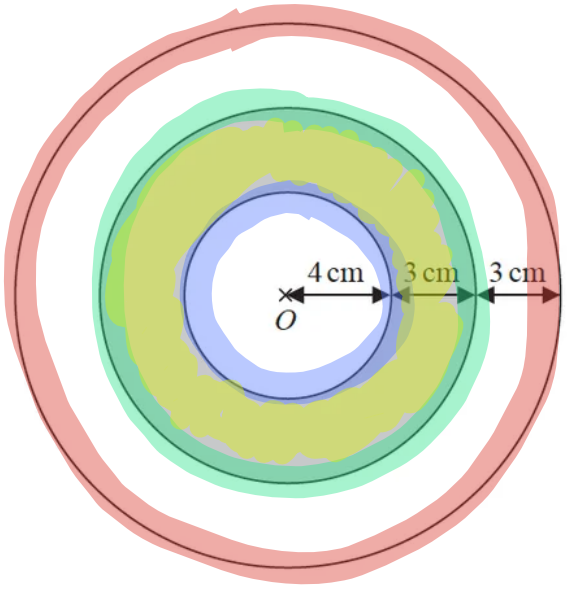
$\dfrac{50\pi}{400} = \dfrac{\pi}{8}$ (÷50 ÷50)

(Total for Question 26 is 4 marks)

[Edexcel, GCSE, Autumn 2018, Paper 1F, Q26]

5

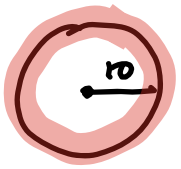
The diagram shows a logo made from three circles.



Each circle has centre O.

Daisy says that exactly $\frac{1}{3}$ of the logo is shaded.

Is Daisy correct?
You must show all your working.



Area $= \pi \times 10^2 = 100\pi$



Area $= \pi \times 7^2 = 49\pi$



Area $= \pi \times 6^2 = 16\pi$

Shaded $= 49\pi - 16\pi = 33\pi$

Logo $= 100\pi$

$$\frac{33\pi}{100\pi} = \frac{33}{100}$$

She is incorrect.

$\frac{33}{100} \neq \frac{1}{3}$

(Total for Question 26 is 4 marks)

[Edexcel, GCSE, Autumn 2017, Paper 1F, Q26]