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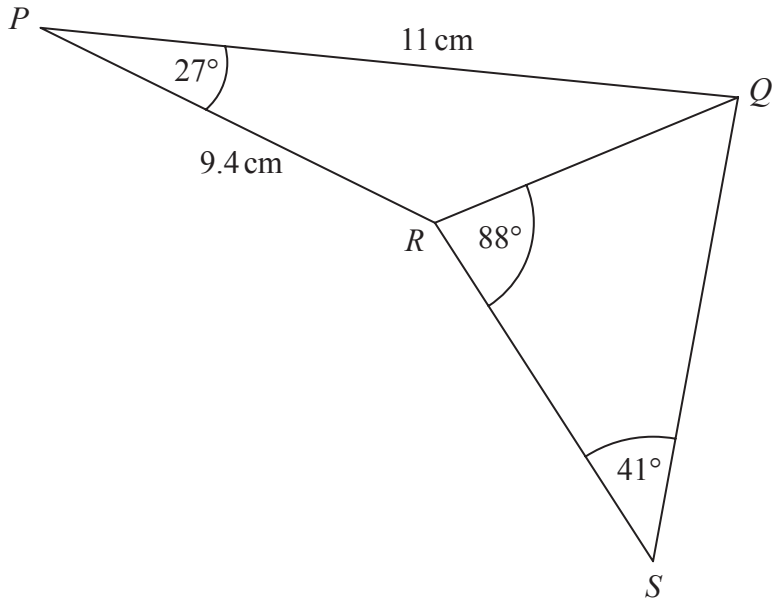
PE18A

18 *PQR* and *QRS* are triangles.



Calculate the length of *QS*.
Give your answer correct to 3 significant figures.
You must show all your working.

..... cm

(Total for Question 18 is 4 marks)

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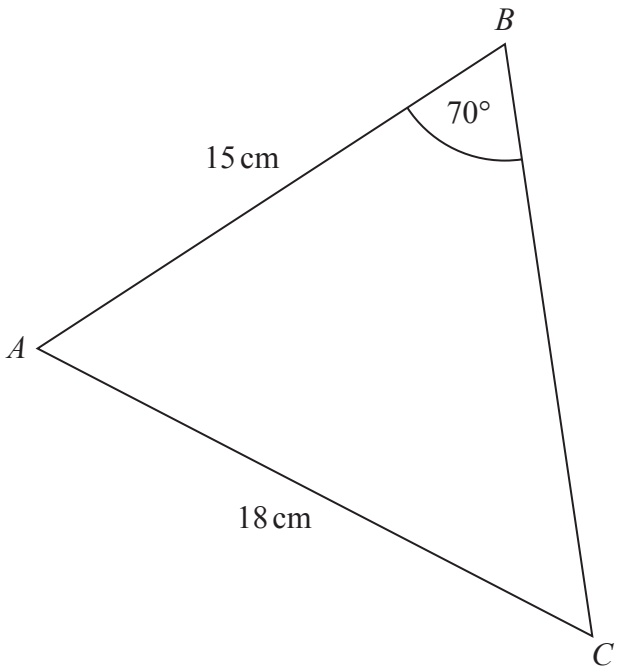
13 *ABC* is a triangle.

PL13A



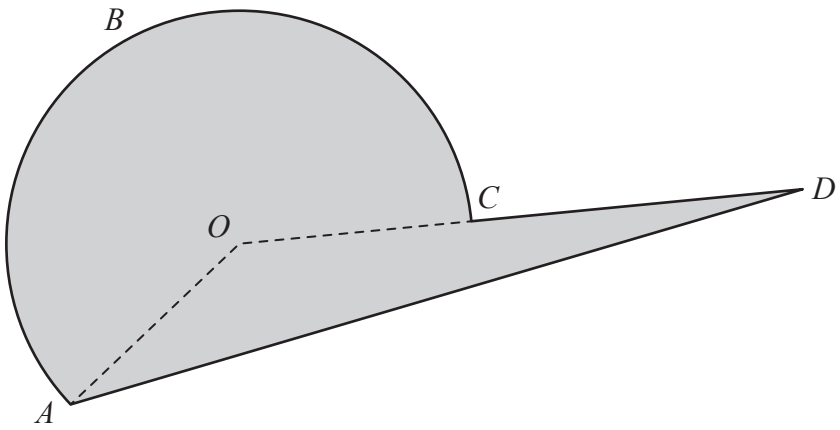
Calculate the size of angle *BAC*.
Give your answer correct to 1 decimal place.

.....°

(Total for Question 13 is 4 marks)

16 Here is a shaded shape $ABCD$.

BG16A



The shape is made from a triangle and a sector of a circle, centre O and radius 6 cm.
OCD is a straight line.

$AD = 14$ cm
Angle $AOD = 140°$
Angle $OAD = 24°$

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

.....cm

(Total for Question 16 is 5 marks)

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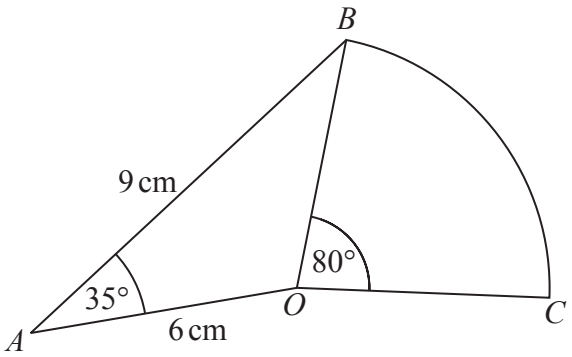
PM14A

14 *OAB* is a triangle.
OBC is a sector of a circle, centre *O*.



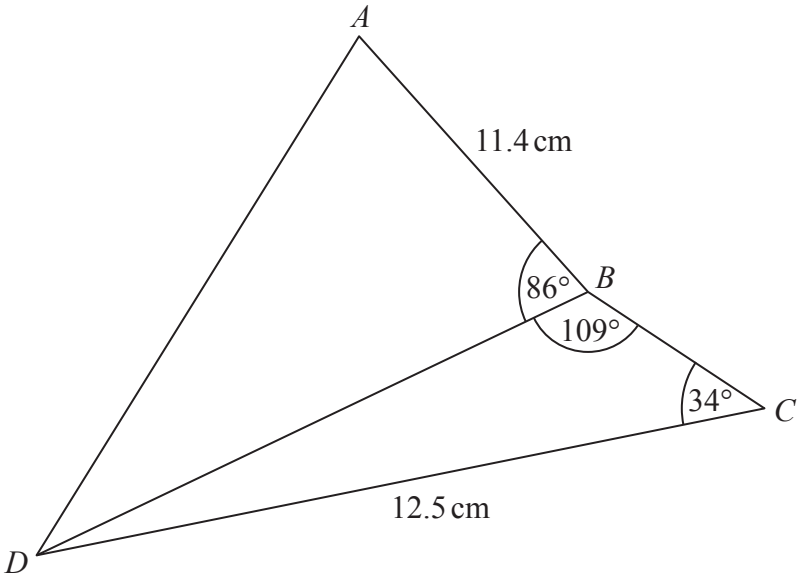
Calculate the area of *OBC*.
Give your answer correct to 3 significant figures.

..... cm^2

(Total for Question 14 is 4 marks)

17

BJ17A



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

..... cm

(Total for Question 17 is 5 marks)

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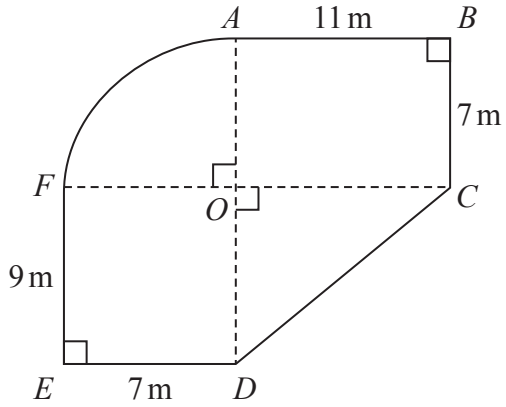
PH4A

4 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 4 is 5 marks)

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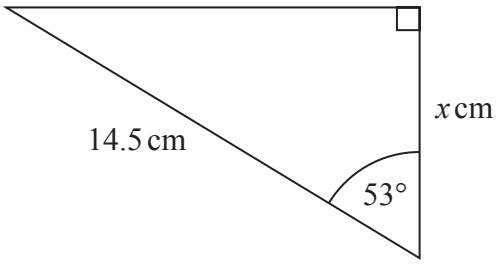
5



PH5A

Work out the value of x.
Give your answer correct to 3 significant figures.

$x =$ .....

(Total for Question 5 is 2 marks)

6 Ella invests £7000 for 2 years in an account paying compound interest.

In the first year, the rate of interest is 3%
In the second year, the rate of interest is 1.5%

Work out the value of Ella's investment at the end of 2 years.

PH6A

£.....

(Total for Question 6 is 3 marks)

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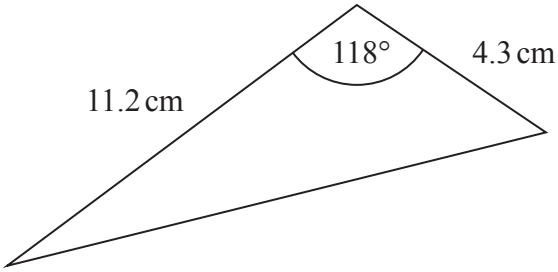
18 Here is a triangle.



PH18A

Work out the area of the triangle.
Give your answer correct to 3 significant figures.

..... cm^2

(Total for Question 18 is 2 marks)

19 Solve $6x^2 + 5x - 6 = 0$

PH19A

.....

(Total for Question 19 is 3 marks)

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8 Use your calculator to work out

$$\frac{\sqrt[3]{1.57^4 + \tan 60°}}{7.2^{\frac{1}{2}}}$$

PE8A

Give your answer correct to 3 significant figures.

.....

(Total for Question 8 is 2 marks)

9 A box in the shape of a cuboid is placed on a horizontal floor.

The box exerts a force of 180 newtons on the floor.
The box exerts a pressure of 187.5 newtons/m^2 on the floor.

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

The face in contact with the floor is a rectangle of length 1.2 metres and width x metres.

Work out the value of x.

PE9A

$x =$ .....

(Total for Question 9 is 3 marks)

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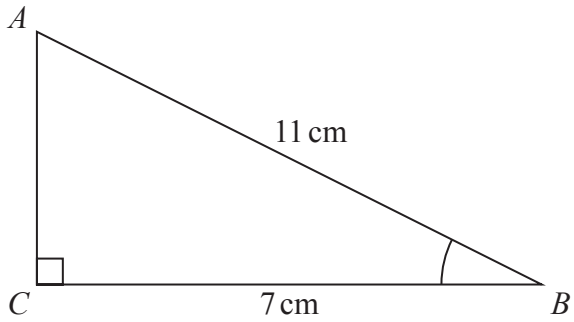
5 ABC is a right-angled triangle.

BJ5A



(a) Work out the size of angle ABC.
Give your answer correct to 1 decimal place.

.....°

(2)

The length of the side AB is reduced by 1 cm.

The length of the side BC is still 7 cm.
Angle ACB is still 90°

(b) Will the value of cos ABC increase or decrease?
You must give a reason for your answer.

.....

.....

(1)

(Total for Question 5 is 3 marks)

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16 The nth term of a sequence is given by $an^2 + bn$ where a and b are integers.

BJ16A

The 2nd term of the sequence is –2
The 4th term of the sequence is 12

(a) Find the 6th term of the sequence.

(4)

Here are the first five terms of a different quadratic sequence.

0 2 6 12 20

(b) Find an expression, in terms of n, for the nth term of this sequence.

(2)

(Total for Question 16 is 6 marks)

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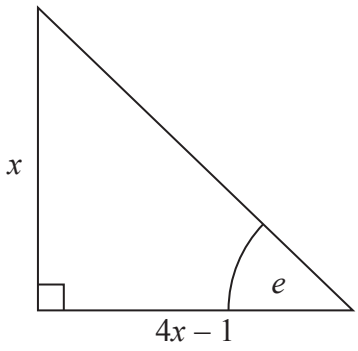
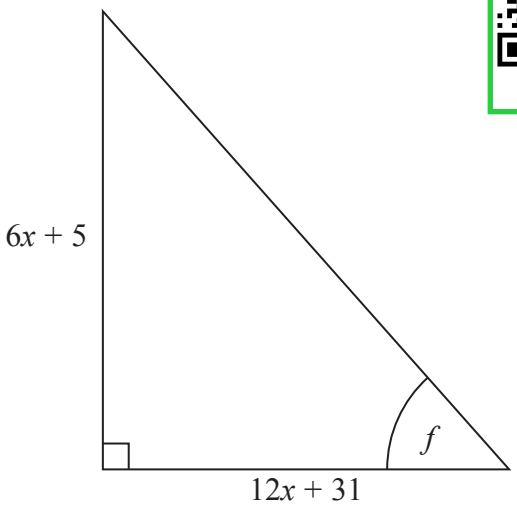
19 Here are two right-angled triangles.

BJ19A





Given that

$$\tan e = \tan f$$

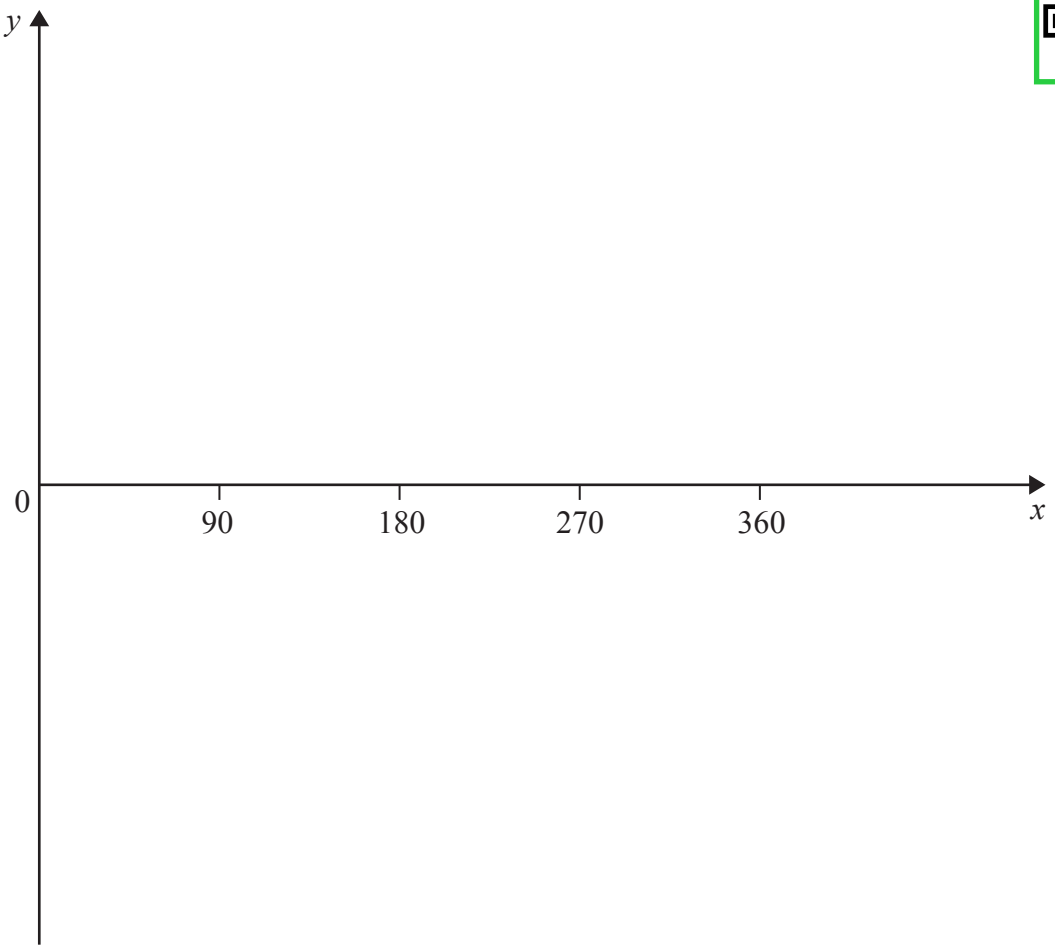
find the value of x.

You must show all your working.

(Total for Question 19 is 5 marks)

11 Sketch the graph of $y = \tan x°$ for $0 \leqslant x \leqslant 360$

BG11A



(Total for Question 11 is 2 marks)

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19 Solve algebraically the simultaneous equations

$$2x^2 \quad y^2 = 17$$
$$x + 2y = 1$$

BG19A

(Total for Question 19 is 5 marks)

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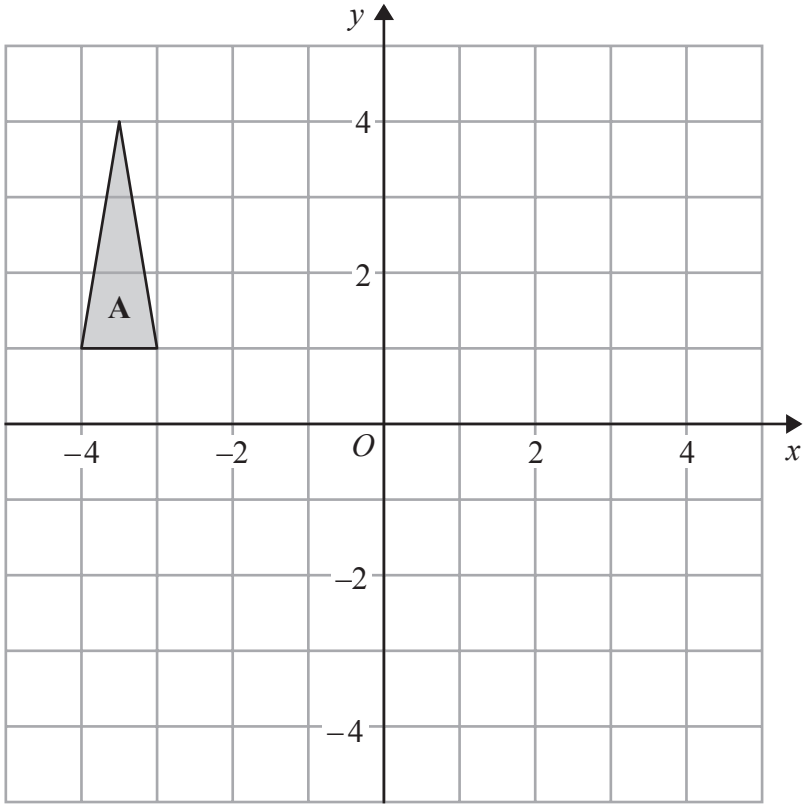
20

BG20A



Triangle **A** is transformed by the combined transformation of a rotation of 180° about the

$$\begin{pmatrix} -3 \\ 2 \end{pmatrix}$$

One point on triangle **A** is invariant under the combined transformation.

Find the coordinates of this point.

(..... , ...)

(Total for Question 20 is 2 marks)

TOTAL FOR PAPER IS 80 MARKS

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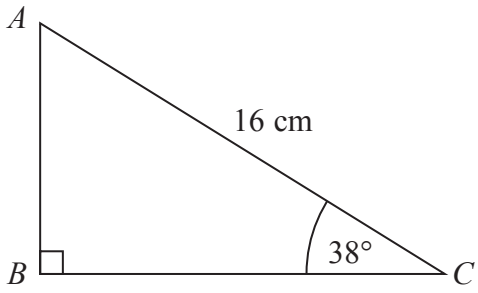
5 *ABC* is a right-angled triangle.

KY5A



Calculate the length of *AB*.
Give your answer correct to 2 decimal places.

..... cm

(Total for Question 5 is 2 marks)

6 Sally used her calculator to work out the value of a number *y*.

KY6A

The answer on her calculator display began

8.3

Complete the error interval for *y*.

..... $\leqslant y <$ .....

(Total for Question 6 is 2 marks)

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8

$$\sqrt{\frac{+}{-}}$$

BL8A

(2)

(1)

(Total for Question 8 is 3 marks)

9 –

BL9A

(Total for Question 9 is 3 marks)

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