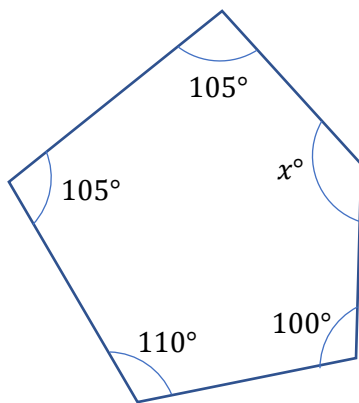


Total 30 Marks

No Calculator Allowed

- 1) Find the angle labelled as x in the diagram below:



Not to scale

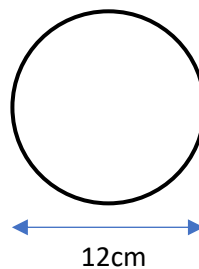
(Total 3 Marks)

- 2) Make x the subject of

$$\frac{3x}{t} + m = p$$

(Total 3 Marks)

- 3) Find the area of the circle below. Give your answer in terms of π



.....cm²

(Total 2 Marks)

- 4) Between 2020 and 2023, the minimum wage in the UK increased by 20%

Given that the minimum wage in 2023 was £10.20 per hour, find the minimum wage in 2020

(3 Marks)

- 5) Solve for x

$$\frac{3}{x-1} + 5 = 7$$

(Total 3 marks)

6) This diagram shows part of a regular 12-sided polygon



a) For this polygon, find the size of an exterior angle

.....[2]

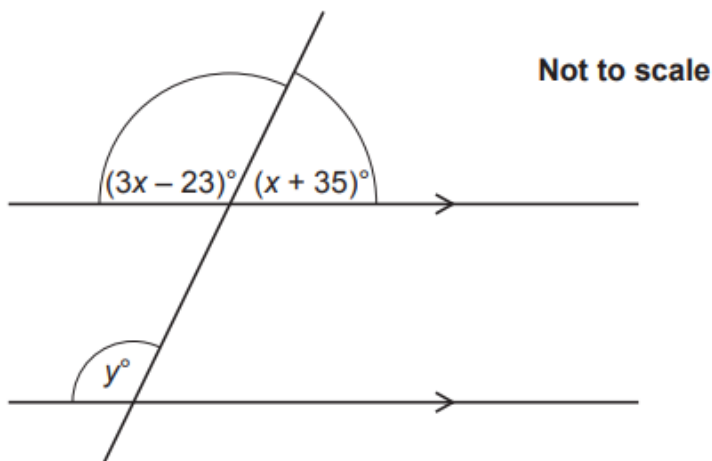
b) Hence find the ratio of the size of one exterior angle to the size of one interior angles.

Give your answer in its simplest form

.....[3]

(Total 5 Marks)

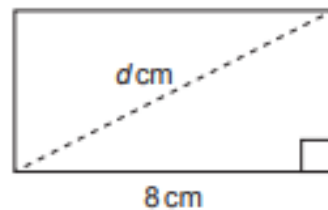
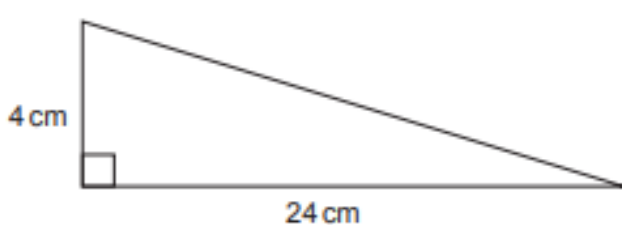
7 The diagram shows a straight line crossing a pair of parallel lines.



Find the value of y .
You must show your working.

(Total 5 Marks)

8) The diagram shows a right-angled triangle and a rectangle.



Not to scale

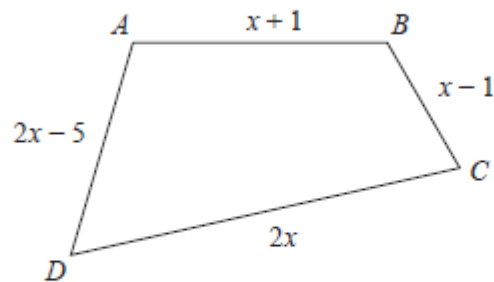
The triangle and rectangle have the same area.

Calculate the length, d cm, of the diagonal of the rectangle.
You must show your working.

(Total 6 Marks)

Answers 1) 120 2) $x = \frac{t(p-m)}{3}$ 3) 36π 4) £8.50 5) $\frac{5}{2}$ 6a) 30 b) 1:5 7) 103 8) 10

1) Here is a quadrilateral $ABCD$.



All the measurements are in centimetres.

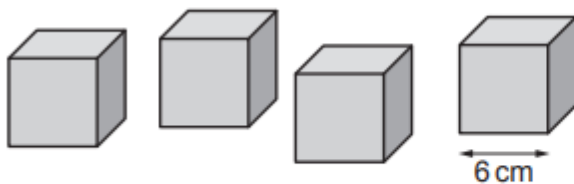
The perimeter of $ABCD$ is 52 centimetres.

Work out the length of DC .

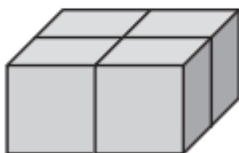
.....centimetres

(Total 4 Marks)

2) A child has four identical wooden cubes of side length 6 cm.



(a) They arrange the cubes in a 2 by 2 by 1 arrangement to form a cuboid.



Show that the surface area of the cuboid is 576 cm^2 .

[2]

(b) The child rearranges the cubes in a 4 by 1 by 1 arrangement to form a different cuboid.



Calculate the percentage increase in surface area for this cuboid compared with the 2 by 2 by 1 cuboid.

(Total 6 Marks)

3) Solve $\frac{5x}{2} + 3 > 18$

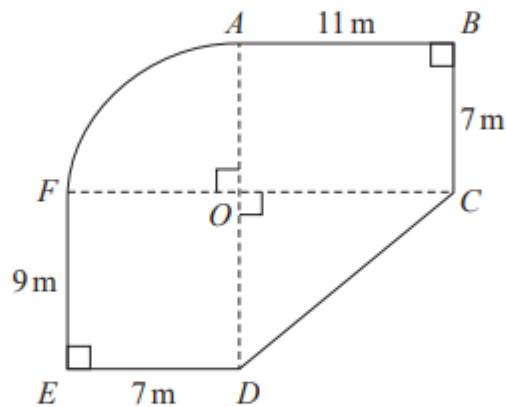
(Total 3 Marks)

- 4) Sandra opens up a new bank account and puts £3000 into the account.
 The account pays 4% compound interest each year.
 How much interest has she earned by the end of 5 years.
 Give your answer to the nearest penny.

(Total 3 marks)

- 5) 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 $AOF = 90^\circ$



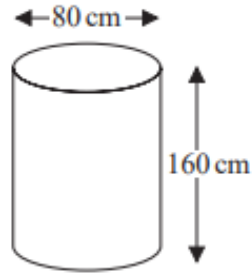
Jason is going to cover his garden with grass seed.
 Each bag of grass seed covers 14 m^2 of garden.
 Each bag of grass seed costs £10.95

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

£.....

(Total 5 Marks)

- 6) Karina has 4 tanks on her tractor.
Each tank is a cylinder with diameter 80 cm and height 160 cm.



The 4 tanks are to be filled completely with a mixture of fertiliser and water.

The fertiliser has to be mixed with water in the ratio 1 : 100 by volume.
Karina has 32 litres of fertiliser.

1 litre = 1000 cm³

Has Karina enough fertiliser for the 4 tanks?
You must show how you get your answer.

(Total 4 Marks)

- 7) Write an expression for y in terms of x

$$x = \frac{y + 1}{y - 2}$$

(Total 4 Marks)

Answers 1) 19 2a) check with us b) 12.5% 3) $x > 6$ 4) £649.96 5) £186.15

6) Yes with comparison of 3216-3217 to 3232 litres 7) $y = \frac{1+2x}{x-1}$