Year 10 Autumn Foundation Assessment
Mathematics

Name _____ Date _____

Time allowed 55 minutes.
The maximum mark for this paper is **45**.

Instructions

- Use black ink or black ball-point pen
- Calculator allowed
- Draw diagrams in pencil
- Answer all questions
- You must answer the questions in the spaces provided
- Do all rough work in this booklet
- Cross through any work you do not want to be marked
- You must keep working until the end of the 55 minutes

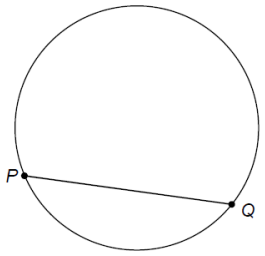
Information

- The results of this assessment will be reported back to parents/carers.

Test Analysis

Question		My Mark	Max Mark	Hegarty
1	Knowing parts of a circle		1	592
2	Ordering Negative Values		1	37
3	Simplifying expressions		1	156
4	Understanding Pie Charts		1	427
5	Identifying cubed numbers		1	100
6	Using a calculator to work out the value of trigonometric expressions		6	130
7	Expanding a single bracket		2	160
8	Area of a Trapezium Volume of a Prism		4	559 571
9	Completing a Frequency Tree		6	368
10	Basic Trigonometry Skills		4	511 510
11	Area of a part of circle		2	540
12	Sharing money in a given ratio		2	332
13	Applying Pythagoras Theorem		2	501
14	Use Trigonometry to find the area of a non-right angled triangle		3	517
15	Sample Space Diagrams and Probability		4	351
16	Angles inside a Polygon		3	561
17	Expanding and simplifying double brackets		2	162

1 Circle the word that describes the straight line PQ



chord *diameter* *radius* *tangent*

[1]

2 Circle the number **greater** than -0.8

-0.802 -0.78 -0.91 -0.80

[1]

3 Simplify $10x - 7 + 3x$

Circle your answer

$7x - 3$ $3x - 7$ $13x - 7$ $6x$

[1]

4 In a pie chart, one sector represents $\frac{1}{3}$ of the data.
What is the angle of that sector?

Circle your answer

$3°$ $90°$ $120°$ $180°$

[1]

5 Circle the cubed number

3 8 9 12

[1]

6 (a) Use your calculator to work out $8 \sin 54°$

Give your answer to 1 decimal place

Answer_____ **[2]**

(b) Use your calcuator to work out $\frac{13}{\tan 50°}$

Give your answer to the nearest integer

Answer_____ **[2]**

(c) Use your calculator to work out $cos^{-1}\left(\frac{\sqrt{2}}{2}\right)$

Give the **correct units** with your answer

Answer_____ **[2]**

7 Expand $7(2x - 9)$

_____

_____

_____

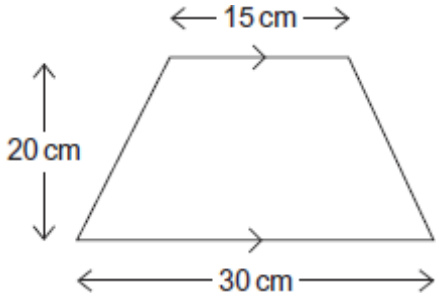
_____

_____

Answer_____ **[2]**

8 The diagram shows a trapezium.

Not drawn accurately

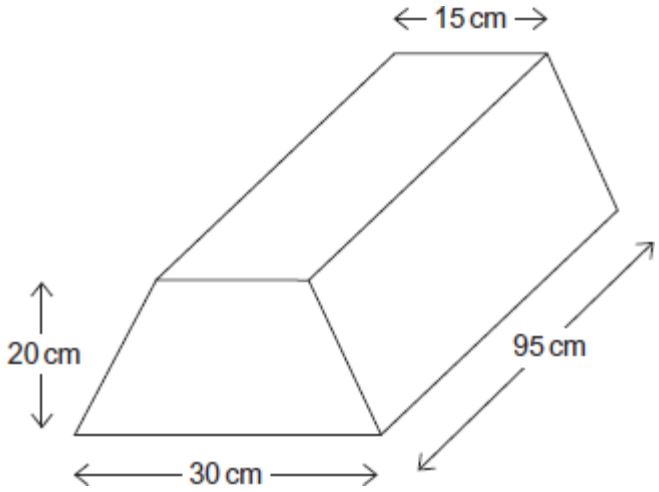


(a) Work out the area of the trapezium.

Answer _____ cm^2

[2]

(b) The trapezium is the cross-section of this prism.



Work out the volume of the prism.

Answer _____ cm^3

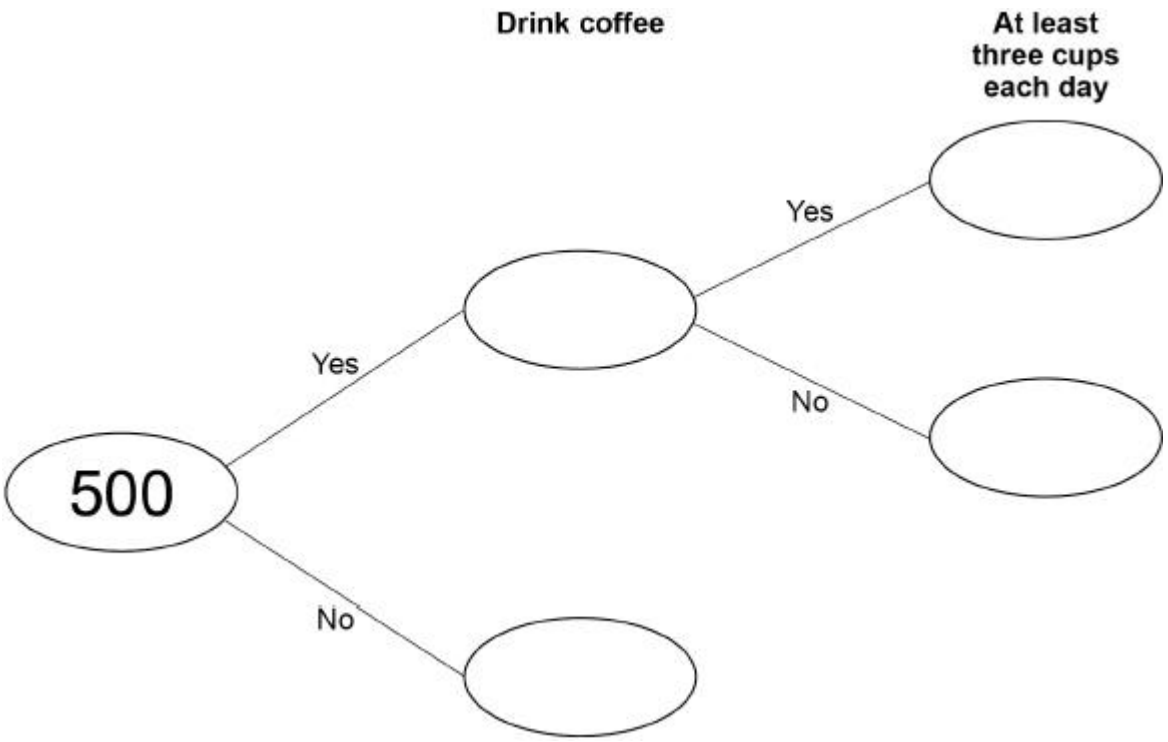
[2]

9 500 people are asked if they drink coffee.

$\frac{9}{10}$ say Yes.

20% of the people who say Yes drink at least three cups each day.

(a) Complete the frequency tree.



[4]

(b) What fraction of the 500 people drink at least three cups of coffee each day?

Give your answer in its simplest form.

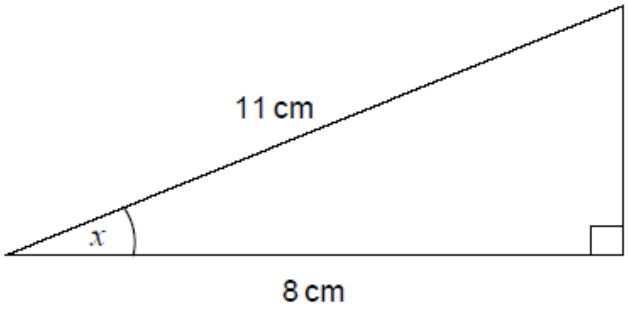
_____

_____

Answer _____

[2]

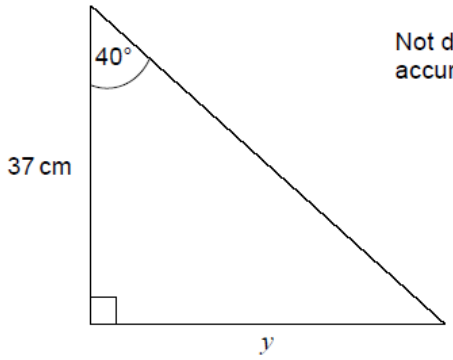
10 (a) Work out the size of angle x
Give your answer to 1 decimal place.



Not drawn accurately

Answer _____ [**2**]

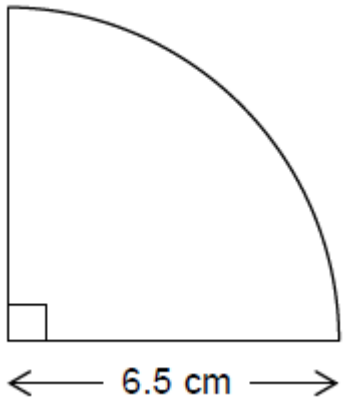
(b) Work out the length y.
Give your answer to 1 decimal place.



Not drawn accurately

Answer _____ **[2]**

11 The diagram shows a quarter-circle with radius 6.5cm



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Work out the area of the **quarter-circle**.
Give your answer to 1 decimal place.

Answer_____ [**2**]

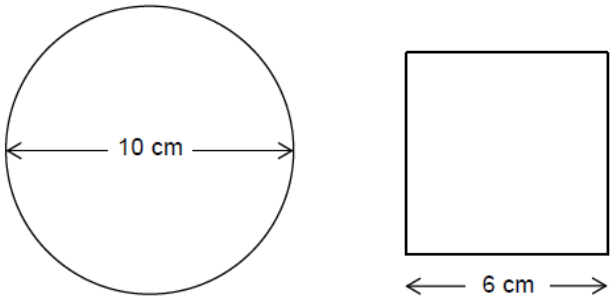
12 Share £90 in the ratio 3:7

Answer _____

[2]

13 A circle has a diameter 10cm
A square has side length 6cm

Not drawn accurately

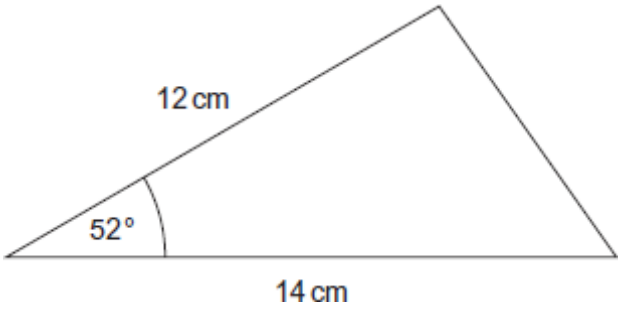


Use Pythagoras' theorem to show whether the square will fit inside the circle without touching the edge of the circle

[2]

14 Use trigonometry to help work out the area of the triangle.

Not drawn accurately



State the units of your answer.

_____

_____

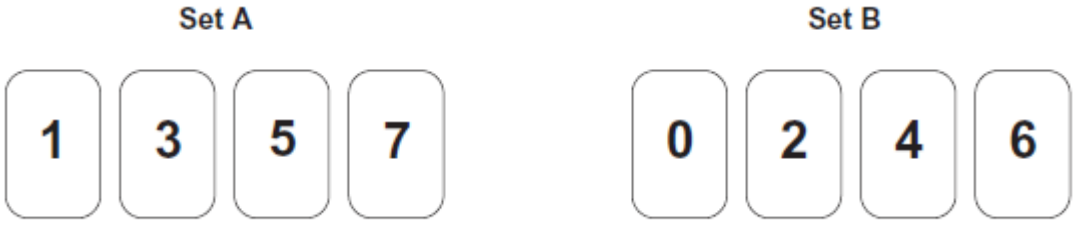
_____

_____

Answer _____

[3]

15 Here are two sets of cards.



One card is chosen at random from each set.
The numbers on the cards are added to give a score.

(a) Complete the table to show the possible scores.

		Set A			
	+	1	3	5	7
Set B	0	1	3		
	2	3			
	4				
	6				

[2]

(b) What is the probability that the score is even?

_____

Answer _____

[1]

(c) What is the probability that the score is **not** a square number?

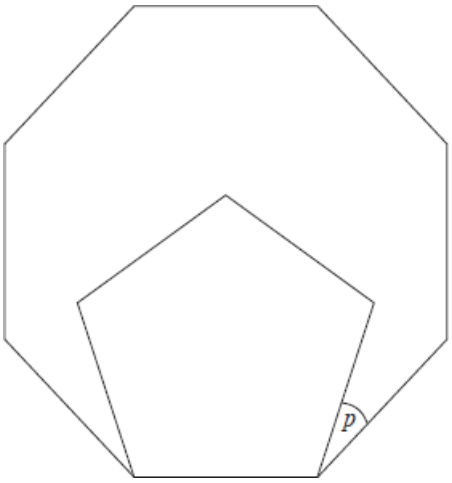
_____

Answer _____

[1]

16 A regular pentagon is drawn inside a regular octagon as shown.

Not drawn accurately



Calculate the size of angle p.
You **must** show your working.

Answer _____ degrees **[3]**

17 Expand and simplify $(x + 7)(x + 3)$

Answer _____ **[2]**

END OF TEST