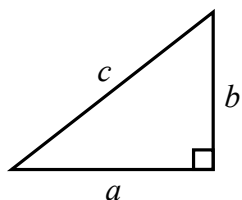


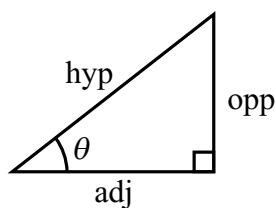
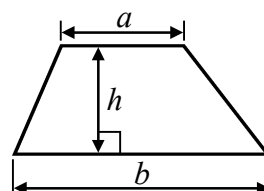
IGCSE MATHEMATICS 4400

FORMULA SHEET – FOUNDATION TIER

Pythagoras' Theorem
 $a^2 + b^2 = c^2$



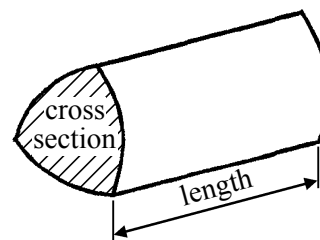
Area of a trapezium = $\frac{1}{2}(a + b)h$



$adj = hyp \times \cos \theta$
 $opp = hyp \times \sin \theta$
 $opp = adj \times \tan \theta$

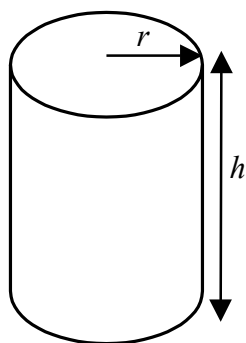
Volume of prism = area of cross section \times length

or $\sin \theta = \frac{opp}{hyp}$
 $\cos \theta = \frac{adj}{hyp}$
 $\tan \theta = \frac{opp}{adj}$



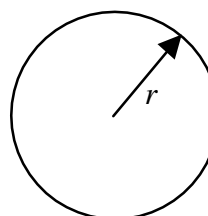
Circumference of circle = $2\pi r$

Area of circle = πr^2



Volume of cylinder = $\pi r^2 h$

Curved surface area of cylinder = $2\pi r h$



Answer ALL TWENTY ONE questions.
Write your answers in the spaces provided.
You must write down all the stages in your working.

1. (a) Here is a list of numbers.

999 1999 199 9000 1009

(i) Write these numbers in order of size.
Start with the smallest.

.....

(ii) From the list, write down an even number.

.....

(iii) From the list write down a number that is a multiple of 9

.....

(3)

(b) Here are four cards.
Each card has a number on it.

3	4	1	2
---	---	---	---

The four cards are arranged to make the number 3412
The cards can be re-arranged to make other numbers.

(i) Write down the largest number that can be made.

.....

(ii) Write down the smallest **odd** number that can be made.

.....

(3)

Q1

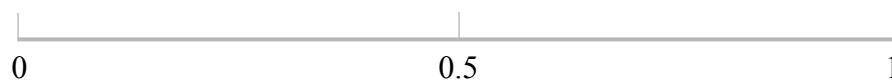
(Total 6 marks)



Leave blank

2. On the probability scale, mark the following with a cross (x).

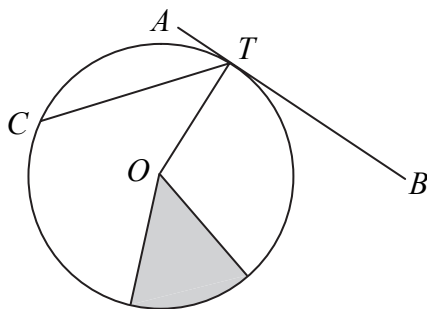
- (i) The probability that the next baby to be born will be a boy.
Label this cross **A**.
- (ii) The probability that the day after Saturday will be Sunday.
Label this cross **B**.
- (iii) The probability that a person chosen at random has a birthday in May.
Label this cross **C**.



Q2

(Total 3 marks)

3. O is the centre of the circle.



The line AB touches the circle at T .

(a) Write down the mathematical name for the line

(i) OT ,

.....

(ii) CT ,

.....

(iii) AB .

.....

(3)

(b) Write down the mathematical name for the shaded region.

.....

(1)

Q3

(Total 4 marks)



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blank

4. (a) Write a number in the box so that this is a correct calculation.

$$189 \times \boxed{} = 3969$$

(1)

- (b) Write down the value of the 3 in the number 3969

.....
(1)

- (c) Write the number 3969 correct to the nearest 10

.....
(1)

- (d) Write the number 3969 correct to the nearest 100

.....
(1)

- (e) Find the square root of 3969

.....
(1)

- (f) Find the cube root of 3969

- (i) Write down all the figures on your calculator display.

.....

- (ii) Give your answer correct to 3 significant figures.

.....
(2)

(Total 7 marks)

Q4



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5. This formula gives the cost of hiring a bike for a number of days.

$$\text{cost in pounds} = 4 \times \text{number of days} + 2$$

(a) Angus hired a bike for 5 days.
Calculate the cost.

£
(2)

(b) Jeevan hired a bike.
The cost was £30
Calculate the number of days for which Jeevan hired the bike.

.....
(2)

(Total 4 marks)

Q5



Leave
blank

6. Here is a list of fractions.

$$\frac{7}{20}$$

$$\frac{3}{10}$$

$$\frac{9}{25}$$

$$\frac{12}{36}$$

From the list, write down the fraction which is

(a) equivalent to $\frac{1}{3}$

.....
(1)

(b) equal to 0.3

.....
(1)

(c) the largest.

.....
(3)

(Total 5 marks)

Q6



7. Chocolate bars cost £1.10 each.
Cakes cost £1.25 each.
Joshi buys 2 chocolate bars and 3 cakes.
He pays with a £10 note.

Work out how much change he should receive.

£

(Total 3 marks)

Leave
blank

Q7



Leave
blank

8. Here are the numbers of points scored by 8 teams in a season.

5 3 14 12 4 3 6 9

(a) Find the mode.

.....
(1)

(b) Work out the mean.

.....
(3)

(c) Find the median.

.....
(2)

(d) The team that scored 4 points was The Cheetahs.
Later, The Cheetahs had points taken away because of foul play.

(i) Will the median increase or decrease or stay the same?

.....

(ii) Give your reason.

.....
.....
.....

(2)

(e) A team is chosen at random from these 8 teams.
Find the probability that this team scored more than 10 points.

.....
(2)

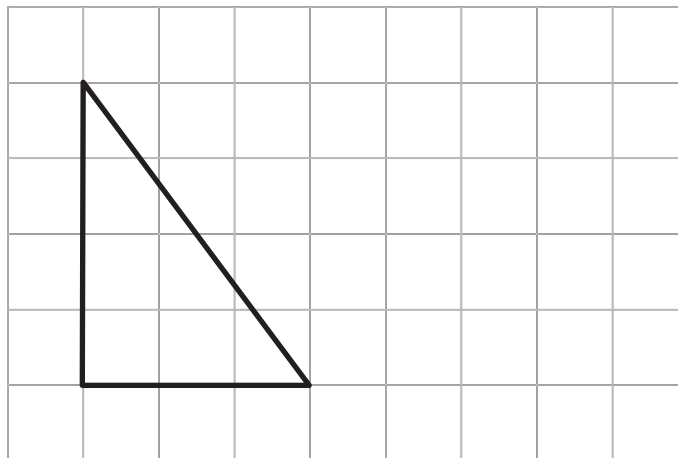
(Total 10 marks)

Q8

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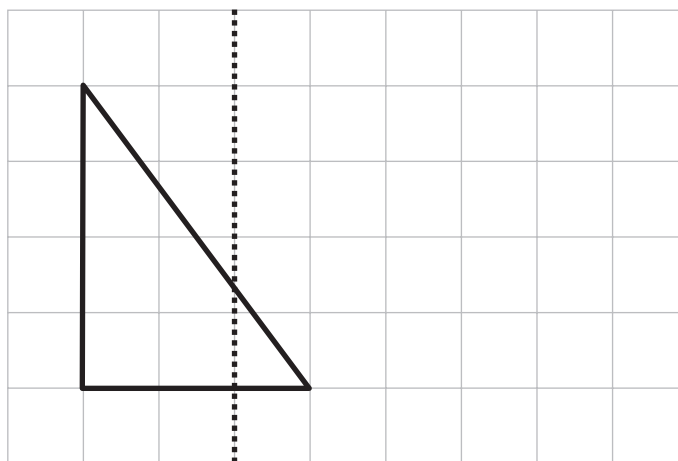
9. The diagram shows a triangle drawn on a 1 cm grid.



(a) Work out the area of the triangle.
State the units of your answer.

.....
(3)

(b)



On the grid, reflect the triangle in the dotted line.

(2)

Q9

(Total 5 marks)



10. Here is a number machine.



(a) Work out the **output** when the **input** is 6

.....
(2)

(b) Work out the **input** when the **output** is 70

.....
(2)

(c) Work out the **input** when the **output** is -85

.....
(2)

(d) Find an expression, in terms of x , for the **output** when the **input** is x .

.....
(2)

(Total 8 marks)

Q10



11.

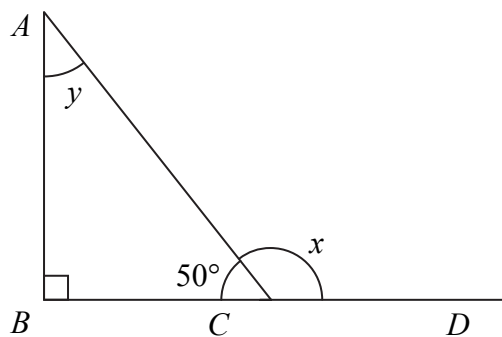


Diagram **NOT** accurately drawn

In the diagram BCD is a straight line.

(a) Work out the size of angle x .

.....
 (1)

(b) (i) Work out the size of angle y .

.....

(ii) Give a reason for your answer to part (b)(i).

.....

 (2)

(Total 3 marks)

Q11



Leave
blank

12. Michelle has £4800

She gives $\frac{2}{5}$ of the £4800 to a charity.

(a) How much money does Michelle give to the charity?

£
(2)

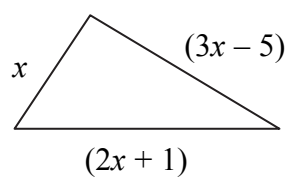
(b) The charity spends 85% of this money on medicines.
How much money does the charity spend on medicines?

£
(2)

(Total 4 marks)

Q12

13. The diagram shows the lengths, in cm, of the sides of a triangle.



The perimeter of the triangle is 17 cm.

(i) Use this information to write an equation in x .

.....

(ii) Solve your equation.

$x =$

(Total 3 marks)

Q13



Leave
blank

14. Anji mixes sand and cement in the ratio 7 : 2 by weight.
The total weight of the mixture is 27 kg.

Calculate the weight of sand in the mixture.

..... kg

(Total 3 marks)

Q14

15. Solve $5(x - 4) = 35$

$x =$

(Total 3 marks)

Q15



Leave
blank

16. Julian has to work out $\frac{6.8 \times 47.6}{2.09}$ without using a calculator.

(a) Round each number in Julian's calculation to one significant figure.

.....
(2)

(b) Use your rounded numbers to work out an estimate for $\frac{6.8 \times 47.6}{2.09}$

Give your answer correct to one significant figure.

.....
(2)

(c) Without using your calculator, explain why your answer to part (b) should be larger than the exact answer.

.....
.....
.....

(2)

Q16

(Total 6 marks)



Leave blank

17. The diagram shows a wall.

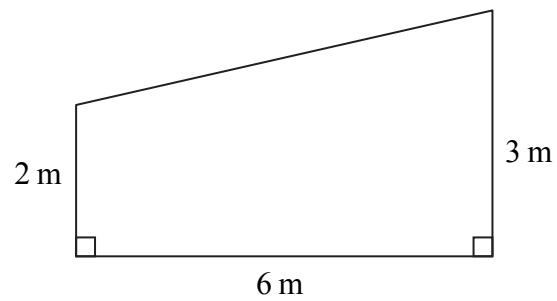


Diagram **NOT** accurately drawn

(a) Calculate the area of the wall.

..... m²
(2)

(b) 1 litre of paint covers an area of 20 m².
Work out the volume of paint needed to cover the wall.
Give your answer in cm³.

..... cm³
(3)

Q17

(Total 5 marks)



18. Solve the simultaneous equations

$$y = x + 3$$
$$y = 7x$$

$x = \dots\dots\dots$

$y = \dots\dots\dots$

(Total 3 marks)

Leave
blank

Q18



N 2 6 2 5 1 A 0 1 7 2 0

19. (a)

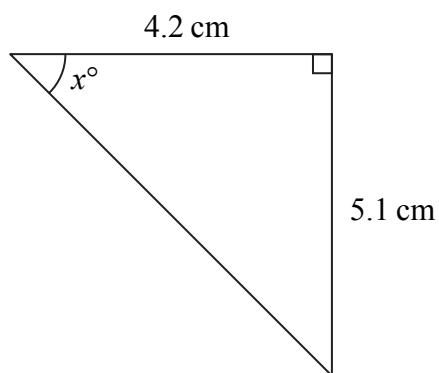


Diagram **NOT** accurately drawn

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

$x = \dots\dots\dots$
(3)

(b)

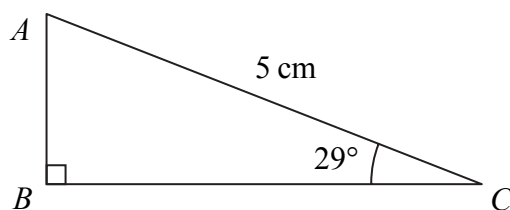


Diagram **NOT** accurately drawn

Calculate the length of AB .
Give your answer correct to 3 significant figures.

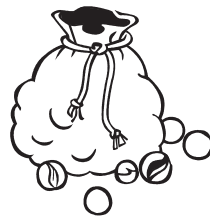
$\dots\dots\dots$ cm
(3)

(Total 6 marks)

Q19



20. A bag contains some marbles.
The colour of each marble is red or blue or green or yellow.



A marble is taken at random from the bag.
The table shows the probability that the marble is red or blue or green.

Colour	Probability
Red	0.1
Blue	0.2
Green	0.1
Yellow	

(a) Work out the probability that the marble is yellow.

.....
(2)

(b) Work out the probability that the marble is blue or green.

.....
(2)

The probability that the marble is made of glass is 0.8

(c) Beryl says “The probability that the marble is green or made of glass is $0.1 + 0.8 = 0.9$ ”

Is Beryl correct?

Give a reason for your answer.

.....
.....
(2)

Q20

(Total 6 marks)

PLEASE TURN OVER FOR QUESTION 21



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blank

21.

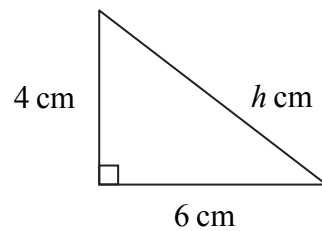


Diagram **NOT**
accurately drawn

Calculate the value of h .
Give your answer correct to 3 significant figures.

$h = \dots\dots\dots$

Q21

(Total 3 marks)

TOTAL FOR PAPER: 100 MARKS

END

