



Rewarding Learning

General Certificate of Secondary Education  
2017

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--

## Mathematics

Unit T5 Paper 2  
(With calculator)  
Foundation Tier



MV18

[GMT52]

FRIDAY 2 JUNE, 10.45am – 11.45am

### Time

1 hour, plus your additional time allowance.

### Instructions to Candidates

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

**You must answer the questions in the spaces provided.**

Complete in black ink only.

Answer **all seventeen** questions.

All working should be clearly shown in the spaces provided.

Marks may be awarded for partially correct solutions.

You **may** use a calculator for this paper.

## Information for Candidates

The total mark for this paper is 50.

Figures in brackets printed at the end of each question indicate the marks awarded to each question or part question.

Functional Elements will be assessed in this paper.

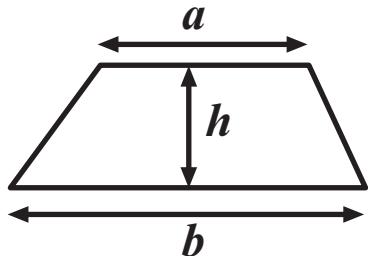
Quality of written communication will be assessed in Question **16**.

You should have a calculator, ruler, compasses and a protractor.

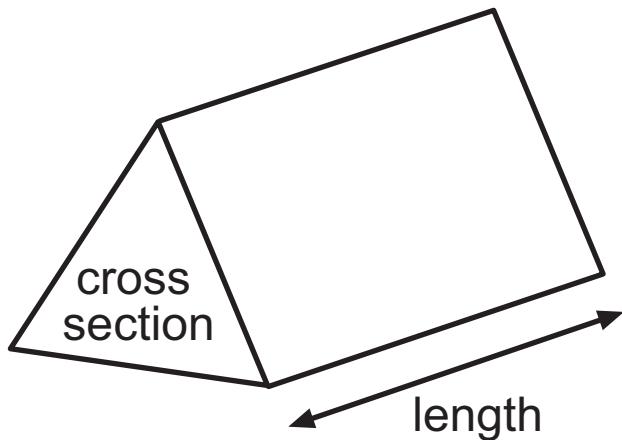
The Formula Sheet is on page 3.

# Formula Sheet

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

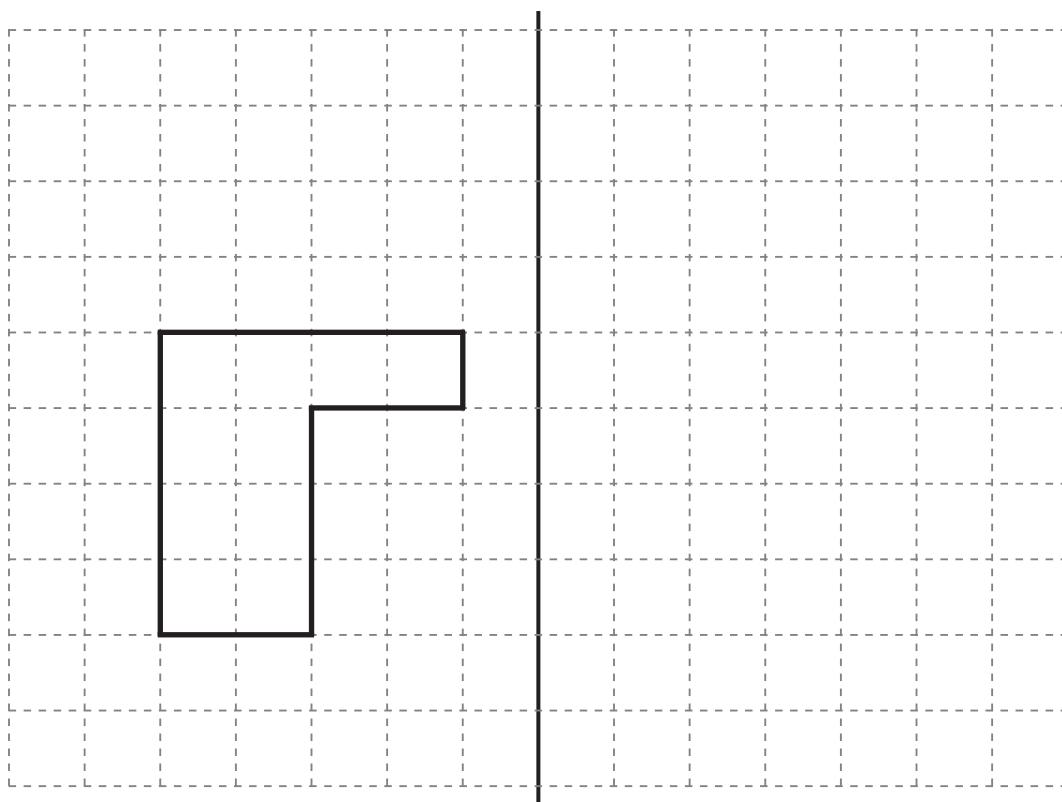


$$\text{Volume of prism} = \text{area of cross section} \times \text{length}$$



- 1 Draw the reflection of the shape in the mirror line.  
[2 marks]

Mirror line



2 Maura works 36 hours each week and earns £8.50 per hour.

(a) How much does she earn each week? [2 marks]

Answer £ \_\_\_\_\_

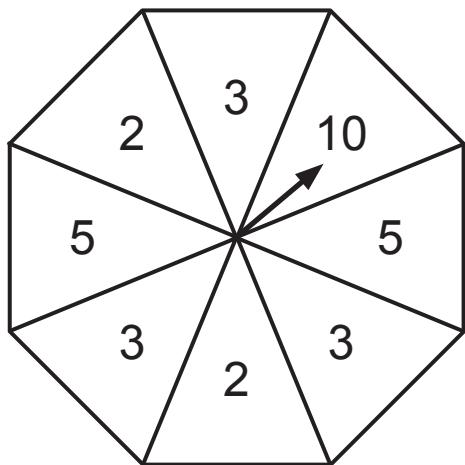
(b) How much does she earn in a year (take 1 year as 52 weeks)? [1 mark]

Answer £ \_\_\_\_\_

(c) How much does she earn each month on average? [1 mark]

Answer £ \_\_\_\_\_

3



The fair spinner has the numbers 2, 3, 5, 10 as shown. It is spun once.

- (a) Which number is the arrow most likely to point to?  
[1 mark]

Answer \_\_\_\_\_

- (b) What is the probability of the arrow pointing to a factor of 30? [1 mark]

Answer \_\_\_\_\_

- (c) What is the probability of the arrow pointing to a square number? [1 mark]

Answer \_\_\_\_\_

- (d) What is the probability of the arrow pointing to an even number? [1 mark]

Answer \_\_\_\_\_

4 To change temperatures from Fahrenheit to Celsius:

Take away 32, then multiply by 5, then divide by 9

(a) Change  $50^{\circ}$  Fahrenheit to  $^{\circ}$  Celsius. [2 marks]

Answer \_\_\_\_\_  $^{\circ}$  Celsius

(b) Change  $32^{\circ}$  Fahrenheit to  $^{\circ}$  Celsius. [1 mark]

Answer \_\_\_\_\_  $^{\circ}$  Celsius

(c) Which is the bigger drop in temperature,  $10^{\circ}$  Fahrenheit or  $10^{\circ}$  Celsius?

Explain your answer. [2 marks]

Answer \_\_\_\_\_

because \_\_\_\_\_

5 A television costs £270 plus VAT.

VAT is charged at 20%.

Calculate the VAT charged. [2 marks]

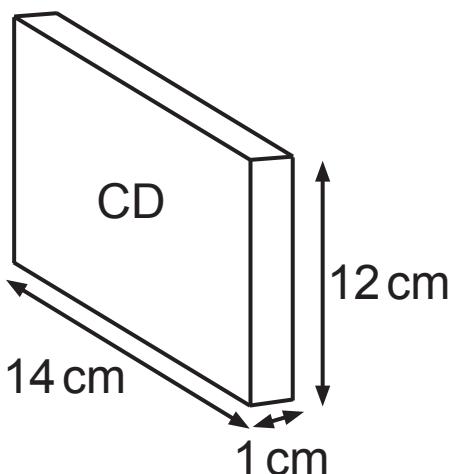
Answer £ \_\_\_\_\_

6 A baby elephant weighs 198 lbs.

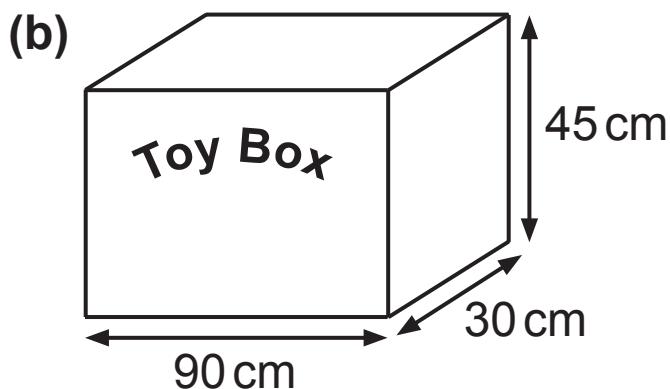
How many kilograms is this? [2 marks]

Answer \_\_\_\_\_ kg

7 (a) Calculate the volume of this CD case. [2 marks]



Answer \_\_\_\_\_



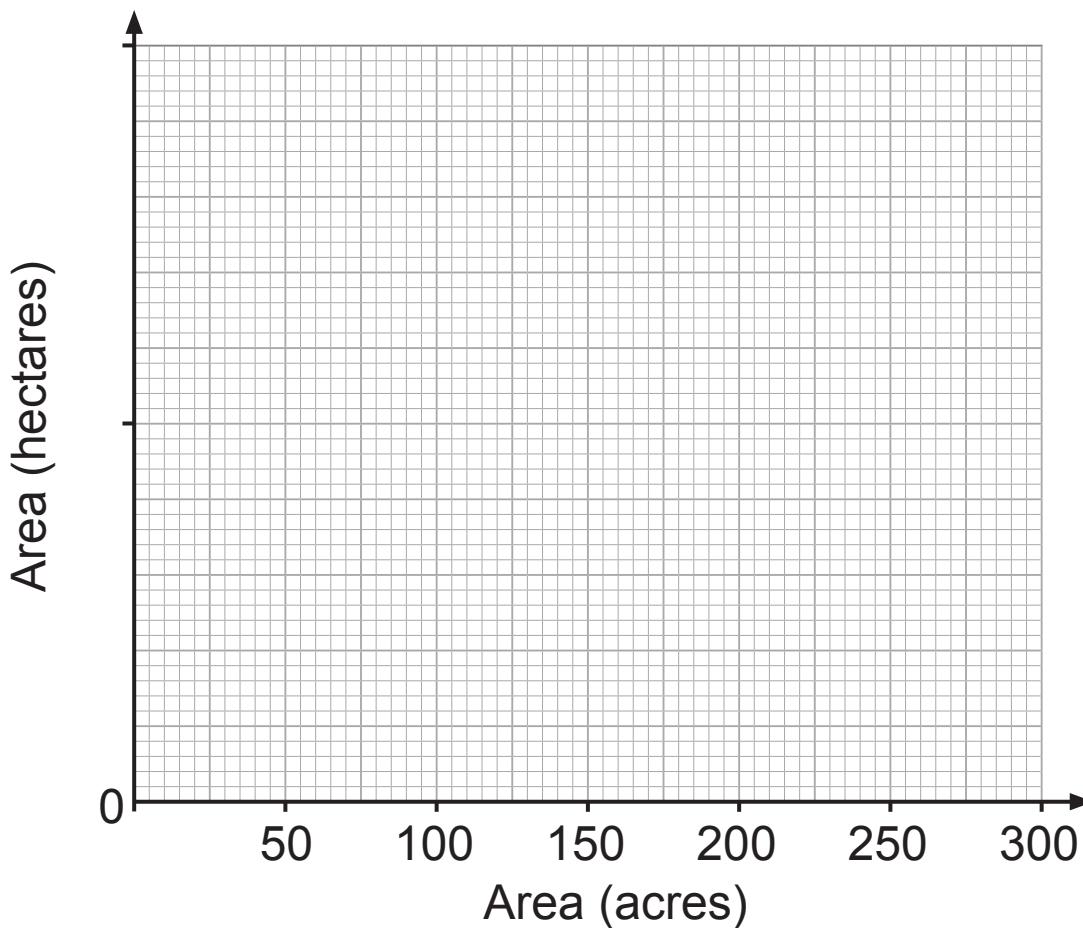
Calculate the total surface area of the **vertical** sides of this toy box, as shown. [2 marks]

Answer \_\_\_\_\_  $\text{cm}^2$

8 Areas of land are measured in either hectares or acres.

(a) Use the values given in the table to draw a conversion graph. [3 marks]

Area (acres)	0	50	200
Area (hectares)	0	20	80



(b) Use your graph to find the number of hectares equivalent to 180 acres. [1 mark]

Answer \_\_\_\_\_ hectares

- 9 (a) Lucy says that the probability of her getting a car for her 18th birthday is  $\frac{3}{2}$   
Explain what is wrong with Lucy's statement. [1 mark]

- (b) Lucy phones Tom. The probability that the phone line is busy is 0.26

What is the probability that it is not busy? [1 mark]

Answer \_\_\_\_\_

- 10 Colin works as a barman. He is paid £9.20 per hour and receives tips.

Last week the tips and his pay for 28 hours totalled £320.40

How much money did he receive in tips? [3 marks]

Answer £ \_\_\_\_\_

- 11 Cathy can buy either a 16GB memory stick or a 64GB memory stick.

The memory sticks are coloured black, red, yellow or green.

- (a) Write down the size and colour of all the different memory sticks that Cathy can buy. [2 marks]

- (b) Cathy bought one of each type of memory stick.

She gives one to her friend Jill.

What is the probability that this is a yellow 16GB memory stick? [1 mark]

Answer \_\_\_\_\_

- 12 What is the sum of all the fractions of the form  $\frac{N}{5}$  where  $N$  is a whole number less than 5? [2 marks]

Answer \_\_\_\_\_

**13** Rewrite  $p + 8 = 6 - q$  to make  $q$  the subject. [2 marks]

Answer  $q =$  \_\_\_\_\_

**14** A coach travels 140 miles in 2 hours 30 minutes.

Calculate the average speed. [3 marks]

Answer \_\_\_\_\_ mph

- 15** Ben observes whether cars turn right or left at a T junction. He records the number of cars that come to the junction and the number that turn left.

Number of cars observed	10	20	50	100
Number of cars that turn left	4	13	33	72

- (a)** What is the relative frequency of cars turning left after 50 observations? [1 mark]

Answer \_\_\_\_\_

- (b)** What is the best estimate for the probability that a car will turn left at this junction? [1 mark]

Answer \_\_\_\_\_

- (c)** In one week 580 cars come to this junction.

Estimate how many turn **right**. [2 marks]

Answer \_\_\_\_\_

**Quality of written communication will be assessed in this question.**

**16** The six angles of two different triangles are placed in order of decreasing size.

Two of the angles are unknown.

The sizes of the angles are:

$118^\circ$     $82^\circ$     $78^\circ$     $46^\circ$     $x^\circ$     $y^\circ$

What is the size of the smallest angle? [2 marks]

Answer \_\_\_\_\_

**17** Adam, Bob and Chris have 18 marbles in total.

Bob gives 5 to Chris. Chris gives 3 to Adam. Adam gives 2 to Bob.

They now have the same number of marbles each.

How many marbles did Bob have to begin with?  
[2 marks]

Answer \_\_\_\_\_

---

**THIS IS THE END OF THE QUESTION PAPER**

---





For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	

Total Marks	

Examiner Number

Permission to reproduce all copyright material has been applied for.  
In some cases, efforts to contact copyright holders may have been unsuccessful and CCEA  
will be happy to rectify any omissions of acknowledgement in future if notified.