

Ma

KEY STAGE

2

LEVEL

6

# Mathematics

## Paper 2

Calculator allowed

First name						
Middle name						
Last name						
Date of birth	Day		Month		Year	
School name						
DfE number						

2015



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Please do not write on this page.



# Instructions

You **may** use a calculator to answer any questions in this paper.

Work as quickly and as carefully as you can.

You have **30 minutes** for this test.

If you cannot do one of the questions, **go on to the next one.**

You can come back to it later, if you have time.

If you finish before the end, **go back and check your work.**

**Follow the instructions for each question carefully.**



This shows where you need to put the answer.

If you need to do working out, you can use any white space on a page.

Do not write over any barcode.

**Some questions have an answer box like this:**



For these questions you may get a mark for showing your method.



D 0 0 1 4 0 A 0 3 1 6

1

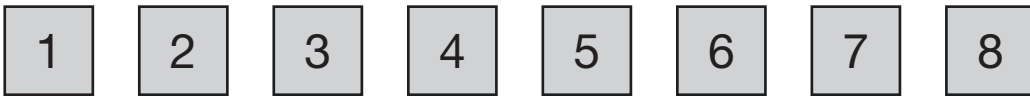
$g$  stands for a number on a grey card.

$w$  stands for a number on a white card.

Join all pairs of numbers that match this rule:

$$2g + w = 10$$

One is done for you.



2 marks



2

- (a) 1 kilogram of grapes costs £5.80

Megan buys 700 grams of grapes.

How much does she pay?



1 mark

- (b) 1 kilogram of cheese costs £13.50

Megan buys a piece of cheese costing £2.49



What is the mass of the cheese to the **nearest 100 grams**?



Show  
your  
method

2 marks



**3**

There are 90 children in Year 6 at Woodland Junior School.

They are split into three classes.

Class	Number in class
6M	27
6P	33
6T	30

Each child chose football **or** netball **or** hockey.

In **6M**, 13 children chose hockey.

The rest of the class were split equally between football and netball.

In **6P**, 9 children chose netball.

Twice as many children chose football as chose hockey.

In **6T**, the ratio of children who chose football to netball to hockey was 1:2:3

Complete this table.



Class	Number in class	Football	Netball	Hockey
6M	27			13
6P	33		9	
6T	30			

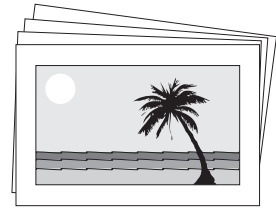
2 marks



4

Alfie has some photographs printed.

The cost is £2.50 for postage and  
12 pence for each print.



Alfie uses this formula for the total cost (**C**) in pence.

$$C = 250 + 12n$$

*n* stands for the number of photographs.

The total cost for Alfie is **£6.70**

How many photographs does he have printed?



Show  
your  
method

2 marks



5

A bag contains coloured counters.

**20 red** counters numbered 1 to 20

**50 blue** counters numbered 1 to 50

**100 green** counters numbered 1 to 100



Chen is going to pick one counter without looking.

- (a) What is the probability of picking a counter with the number 40 on it?



1 mark

- (b) The counter Chen picks is **red**.

What is the probability that it has the number 15 on it?



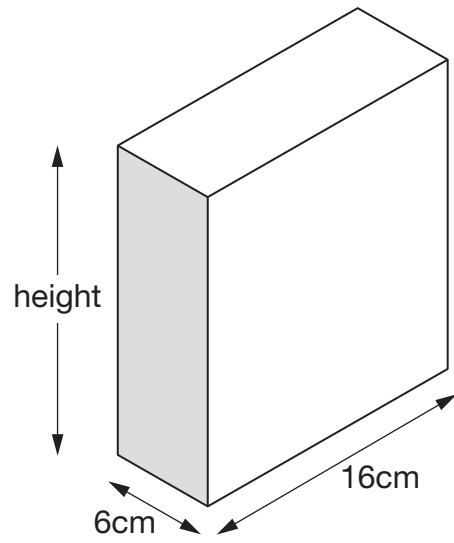
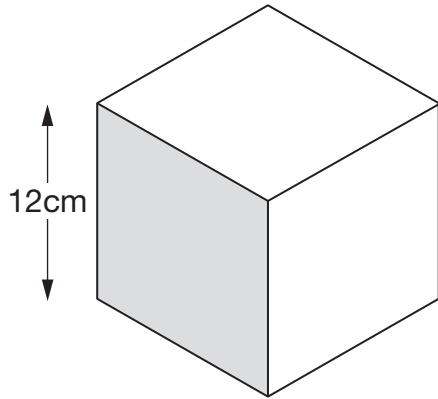
1 mark





6

The cube and cuboid have **equal volumes**.



**Not actual  
size**

Calculate the height of the cuboid.



Show  
your  
method

cm

2 marks



7

$n$  and  $p$  stand for two numbers.

$n$  is a multiple of 5

$p$  is a multiple of 6

$$\frac{n}{p} = \frac{2}{3}$$

Find numbers that  $n$  and  $p$  stand for.



Show  
your  
method

$n =$

$p =$

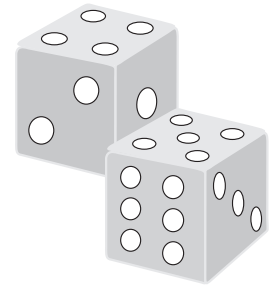
2 marks



8

Two fair dice are each numbered from 1 to 6

The dice are rolled. The numbers are added together to make a total.



Total 9

Jack says,

***'The totals 3 and 9 are equally likely.'***

Explain why Jack is **not** correct.

A large, cloud-shaped outline intended for the student to write their explanation.

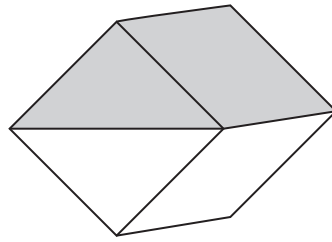
1 mark



9

Here is a cube.

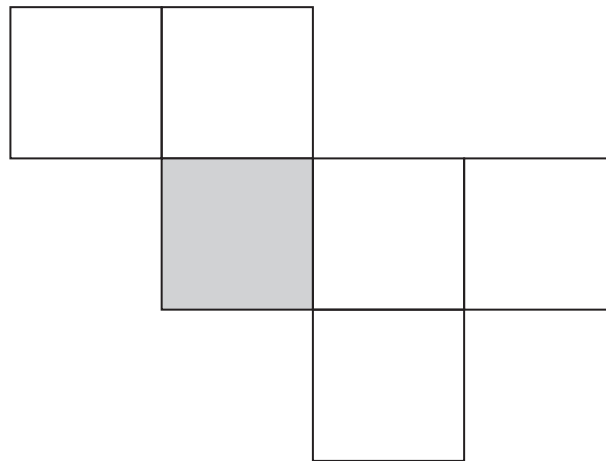
The top half of the cube has been shaded all the way round.



Here is a net for the cube.

One square has been shaded for you.

Shade more of the net so that it could fold to make the cube above.



2 marks



10


In a survey of children's favourite fruit juices, these were the results.

Juice	Apple	Orange	Grape	Mango
Percentage of children	25%	14%	30%	31%

- (a) **20 more** children chose grape than chose apple.

How many children took part in the survey?

Show  
your  
method

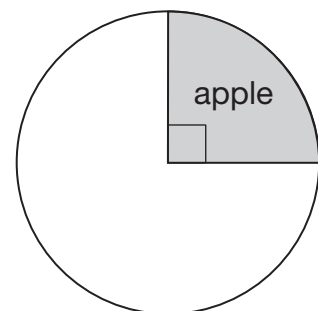


children

2 marks

- (b) Chen makes a pie chart to show the results.

What **angle** should he use for the children who chose **mango**?



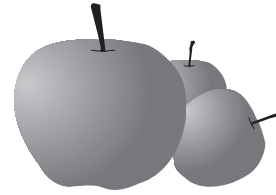


1 mark



11

Three apples have a **mean** (average) mass of 100 grams.



The largest apple is removed.

The **mean** mass of the remaining two apples is 70 grams.

What is the mass of the largest apple?



Show  
your  
method

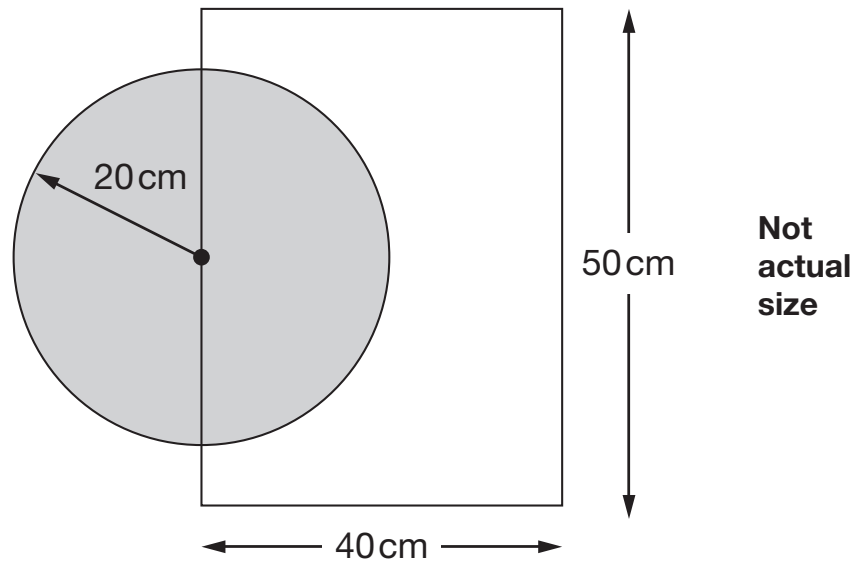
**g**

2 marks



12

The diagram shows a rectangle and a shaded circle with radius 20 cm.



Calculate the **area** of the rectangle that is **not** shaded.

Use this formula:

The area of a circle is  $3.14 \times (\text{radius})^2$



Show  
your  
method

cm<sup>2</sup>

3 marks



D 0 0 1 4 0 A 0 1 5 1 6



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