AQA

Please write clearly in block capitals.

Centre number | | | | | | Candidate number | | | | |

Surname _____

Forename(s) _____

Candidate signature _____

GCSE MATHEMATICS

F

Foundation Tier Unit 2 Number and Algebra

Friday 6 November 2015 Morning Time allowed: 1 hour 15 minutes

Materials

For this paper you must have:
- mathematical instruments.

You must **not** use a calculator.

Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 66.
- The quality of your written communication is specifically assessed in Questions 7, 10, 16 and 17. These questions are indicated with an asterisk (*).
- You may ask for more answer paper and graph paper. These must be tagged securely to this answer book.

Advice
- In all calculations, show clearly how you work out your answer.

Answer **all** questions in the spaces provided.

1 (a) Write down the next odd number after 4529

[1 mark]

Answer .....

1 (b) Write down **all** the factors of 21

[2 marks]

.....

.....

Answer .....

1 (c) Show that 20 is a multiple of 5

[1 mark]

.....

.....

2 (a) Write in words the number 2.46

[1 mark]

.....

2 (b) Write the number 2046 to the nearest 10

[1 mark]

Answer .....

2 (c) Write down the **value** of the digit 4 in the answer to 246×10

[1 mark]

.....

.....

Answer .....

2 (d) Work out $2 + 4 \times 6$

[1 mark]

.....

.....

Answer .....

2 (e) Use each of the numbers 2, 4 and 6 once only to write a calculation with an answer of 3

[1 mark]

..... = 3

9

3 (a) Circle the decimal that is equivalent to $\frac{3}{4}$

[1 mark]

0.34 0.45 0.60 0.75

3 (b) Circle the percentage that is equivalent to 0.3

[1 mark]

0.3% 3% 30% 33%

3 (c) Three of these fractions are equivalent to $\frac{3}{4}$

Circle the fraction that is **not** equivalent to $\frac{3}{4}$

[1 mark]

$\frac{6}{8}$ $\frac{9}{12}$ $\frac{12}{15}$ $\frac{15}{20}$

4 (a) Here is a linear sequence.

..... 13 21 29 37

The first term is missing.

Work out the first term.

[1 mark]

.....

Answer .....

4 (b) Here is a different linear sequence.

11 17 23 29 ....

Work out the next **two** terms.

[1 mark]

.....

.....

Answer ..... and .....

4 (c) Work out an expression for the nth term of the sequence

11 17 23 29 .....

[2 marks]

.....

.....

.....

Answer .....

7

5 Here are six numbers.

1 2 4 6 8 12

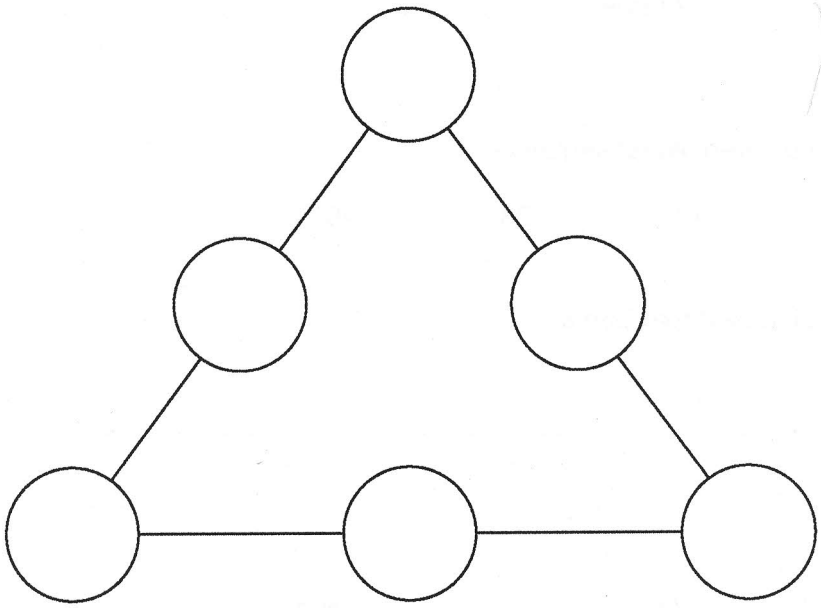
Put the numbers into the circles so that

all of the numbers are used

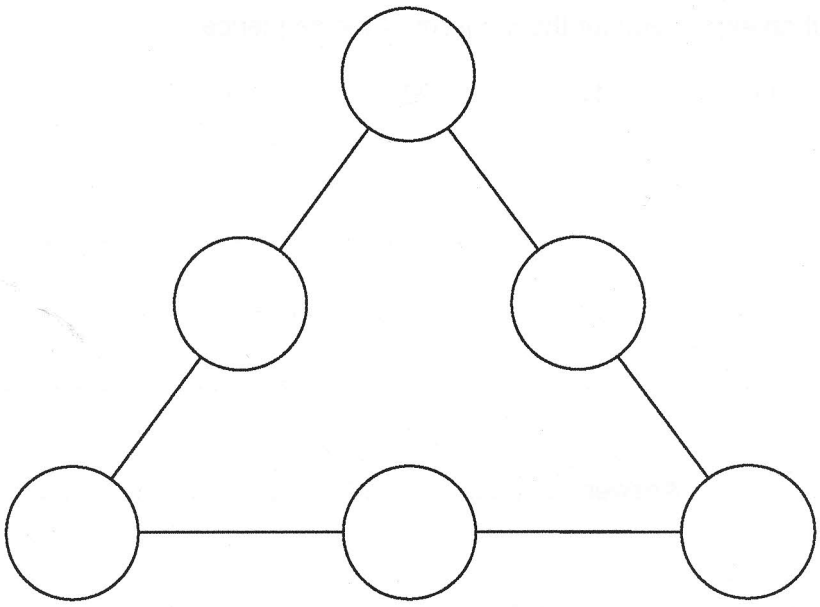
and the product of the three numbers on each side is 48

[3 marks]

You may practise on this diagram.



Put your answer on this diagram.



6 (a) Work out $\frac{3}{5}$ of 45

[2 marks]

.....

.....

Answer .....

6 (b) Work out $\frac{1}{3} \times \frac{1}{5}$

[1 mark]

.....

.....

Answer .....

***7** A company has 8 minibuses.
Each minibus can carry 14 passengers.

The company wants to take 98 people on a trip.

Does the company have enough minibuses?
You **must** show your working.

[2 marks]

.....

.....

.....

.....

.....

.....

Answer .....

8

8 Pat works 38 hours.

She works

28 hours from Monday to Friday
and 10 hours on Saturday.

Her normal pay is £7 per hour.
On Saturday her pay per hour is 20% more.

Work out her total pay.

[4 marks]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Answer £ .....

9 (a) Write these numbers in order, starting with the smallest.

0.7 0.684 0.81

[1 mark]

Smallest .....

.....

Largest .....

9 (b) Work out 0.3×0.2

[1 mark]

.....

.....

Answer .....

9 (c) Work out $0.6 - 0.37$

[1 mark]

.....

.....

Answer .....

7

10 The cost of a taxi ride is given by the formula

$$C = 4.5 + 0.5m$$

C is the cost in pounds.
m is the number of miles.

***10 (a)** Work out the cost for 18 miles.

[2 marks]

.....

.....

.....

.....

Answer £ .....

10 (b) Sidrah paid £17.50 for her taxi ride.

How many miles did she travel?

[2 marks]

.....

.....

Answer ..... miles

11 Tom took three tests.
Here are his results.

English	Maths	Science
13 out of 20	$\frac{37}{50}$	125 out of 200

Write his results as percentages.

[3 marks]

.....

.....

.....

.....

.....

.....

.....

.....

English ..... %

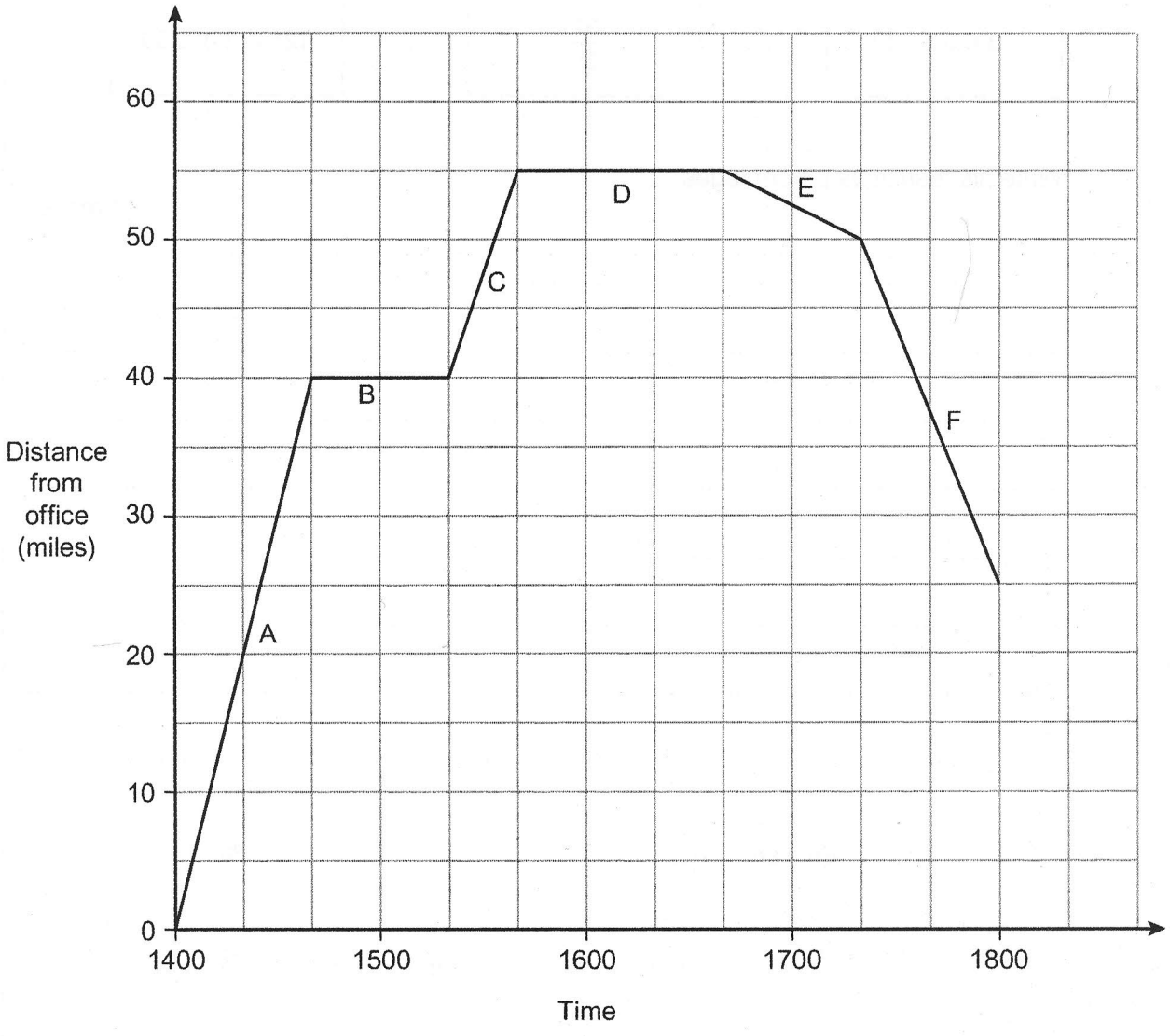
Maths ..... %

Science ..... %

7

12 Ruth left her office at 1400
She drove to two meetings and then drove home.

The distance-time graph shows her journeys.



12 (a) How many minutes was she stopped altogether?

[1 mark]

.....

.....

Answer ..... minutes

12 (b) How many miles did she drive altogether?

[1 mark]

.....

.....

Answer ..... miles

12 (c) On which part of the journey was her speed the fastest?
Circle your answer.

[1 mark]

A C E F

Turn over for the next question

3

13 m is the number of marbles in Bag A.

Bag B has six more marbles than Bag A.

Bag C has twice as many marbles as Bag B.

Bag A Bag B Bag C

13 (a) Write an expression for the number of marbles in Bag C.

[2 marks]

.....

.....

Answer .....

13 (b) Altogether there are 66 marbles.

Work out the number of marbles in Bag A.

[3 marks]

.....

.....

.....

.....

.....

.....

Answer .....

14 Here are five expressions.

A	$2x$
B	$x^2 + 4x$
C	$3x$
D	$2x - x^2$
E	$x^2 + 3x$

When you add two of the expressions the answer is $6x$

Which two expressions?

[1 mark]

..... and .....

15 $N = 2a + b$

a is a two-digit square number.

b is a two-digit cube number.

What is the **smallest** possible value of N?

[3 marks]

.....

.....

.....

.....

.....

.....

Answer .....

9

***16** Here are two offers for batteries.

OFFER A	OFFER B
Pack of 4	Pack of 5
£2.52	£2.75
$\frac{1}{3}$ off	Pay for 3 packs get 1 free

Zak wants to buy 40 batteries.

Which is the cheaper offer?
You **must** show your working.

[5 marks]

.....

.....

.....

.....

.....

.....

.....

.....

.....

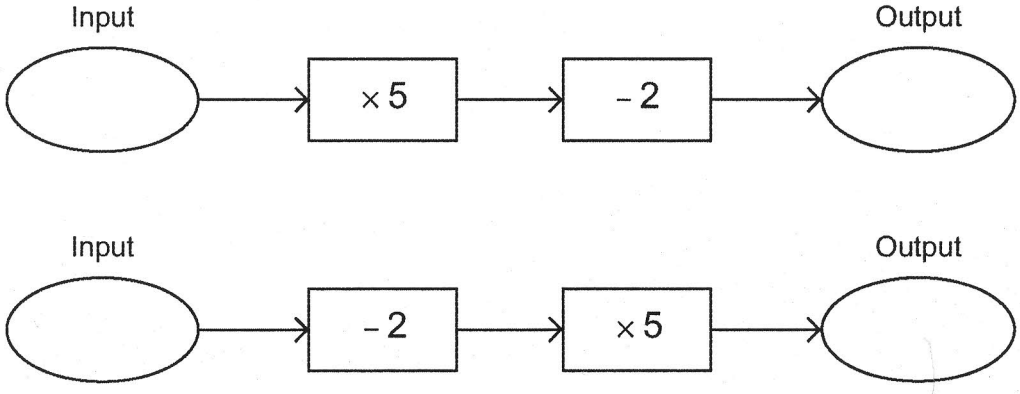
.....

.....

.....

Answer .....

***17** Here are two number machines.



When the inputs are equal,

show that the **difference** between the outputs is always 8

[3 marks]

.....

.....

.....

.....

.....

.....

.....

.....

8

18 (a) Write 132 as a product of prime factors.

[2 marks]

Answer .....

18 (b) Work out the Highest Common Factor (HCF) of 110 and 132

[2 marks]

Answer .....

19 Use approximations to estimate the value of $\frac{3.92^2}{0.48}$

[2 marks]

.....

.....

.....

.....

Answer .....

20 Divide £5600 in the ratio 5 : 3

[2 marks]

.....

.....

.....

.....

Answer £ ..... : £ .....

END OF QUESTIONS

8

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED