

Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

GCSE MATHEMATICS

F

Foundation Tier Unit 2 Number and Algebra

Thursday 9 June 2016

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 3 and 14. 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.



J U N 1 6 4 3 6 0 2 F 0 1

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

1 Apples cost 30p each.
Oranges cost 45p each.

1 (a) Mel buys 8 apples and 6 oranges.

How much change should she get from a £10 note?

[3 marks]

Answer £ _____

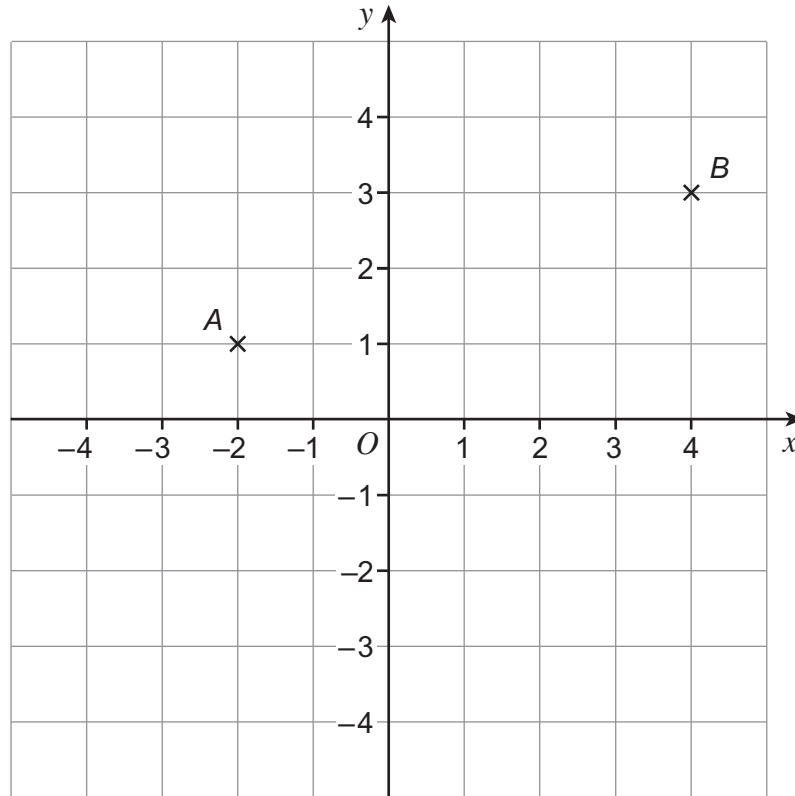
1 (b) Write an expression, in pence, for the cost of x apples and y oranges.

[1 mark]

Answer _____ pence



2



2 (a) Write down the coordinates of the midpoint of AB .

[1 mark]

Answer (_____ , _____)

2 (b) Plot the point $(2, -3)$ on the grid.
Label it C .

[1 mark]

2 (c) D has the same x -coordinate as A .
The y -coordinate of D is 1 **more** than the y -coordinate of C .

Write down the coordinates of D .

[1 mark]

Answer (_____ , _____)



- *3** Paul has saved £2300
He spends £1650 of this on a holiday.
He wants to buy a laptop for £550

Does he have enough money left to buy the laptop?
You **must** show your working.

[3 marks]

- 4 (a)** Write down the **two** common factors of 21 and 56

[1 mark]

Answer _____ and _____

- 4 (b)** Circle the number that is a prime factor of 27

[1 mark]

1 3 9 27



5

White tiles
80 tiles in a box

Blue tiles
50 tiles in a box

Adam needs 440 tiles.
He needs **more** white tiles than blue tiles.

How many of each box does he need?

[3 marks]

Answer _____ boxes of white tiles

_____ boxes of blue tiles

Turn over for the next question

8

Turn over ►



6 (a) Write down the value of $\sqrt{121}$ **[1 mark]**

Answer _____

6 (b) Work out $\frac{1}{5}$ of 45 **[1 mark]**

Answer _____

6 (c) Write down the **value** of the digit 7 in the answer to 5.37×10 **[1 mark]**

Answer _____

6 (d) Work out $4.8 - 1.25$ **[1 mark]**

Answer _____



- 7 (a)** The difference between two positive numbers is 40
The second number is twice the first number.

What are the **two** numbers?

[1 mark]

Answer _____ and _____

- 7 (b)** Two numbers add up to 30
The second number is 50% bigger than the first number.

What are the **two** numbers?

[2 marks]

Answer _____ and _____

Turn over for the next question

7

Turn over ►



8 (a) Solve $x - 11 = 14$

[1 mark]

$$x = \underline{\hspace{10em}}$$

8 (b) Solve $3y - 5 = 19$

[2 marks]

$$y = \underline{\hspace{10em}}$$

8 (c) Simplify $3c + 2d + 4c$

[1 mark]

Answer $\underline{\hspace{10em}}$

8 (d) Work out the value of $7m + 2p$ when $m = 3$ and $p = -4$

[2 marks]

Answer $\underline{\hspace{10em}}$



9 0.2 kg of flour and 0.25 litres of milk makes 3 pancakes.
Rinal has 1 kg of flour and 1 litre of milk.
How many pancakes can she make?

[3 marks]

Answer _____

Turn over for the next question



10 (a) Work out 0.2×0.4

[1 mark]

Answer _____

10 (b) Write these values in order, starting with the smallest.

$\frac{2}{5}$

35%

0.3

[2 marks]

Smallest _____

Largest _____



11 (a) Work out the value of $5^3 - 5^2$

Circle your answer.

[1 mark]

5 10 50 100

11 (b) Work out the value of $2^3 \times 3^2$

Circle your answer.

[1 mark]

24 36 72 108

11 (c) Work out -6×-3

[1 mark]

Answer _____

Turn over for the next question



12 Two trains, *A* and *B*, travel from Derby to York.

Both trains travel at a constant speed.

Here is the timetable for the trains.

	Train <i>A</i>	Train <i>B</i>
Leave Derby	0900	1030
Arrive York	1100	1200

12 (a) Train *A* travels at 60 mph

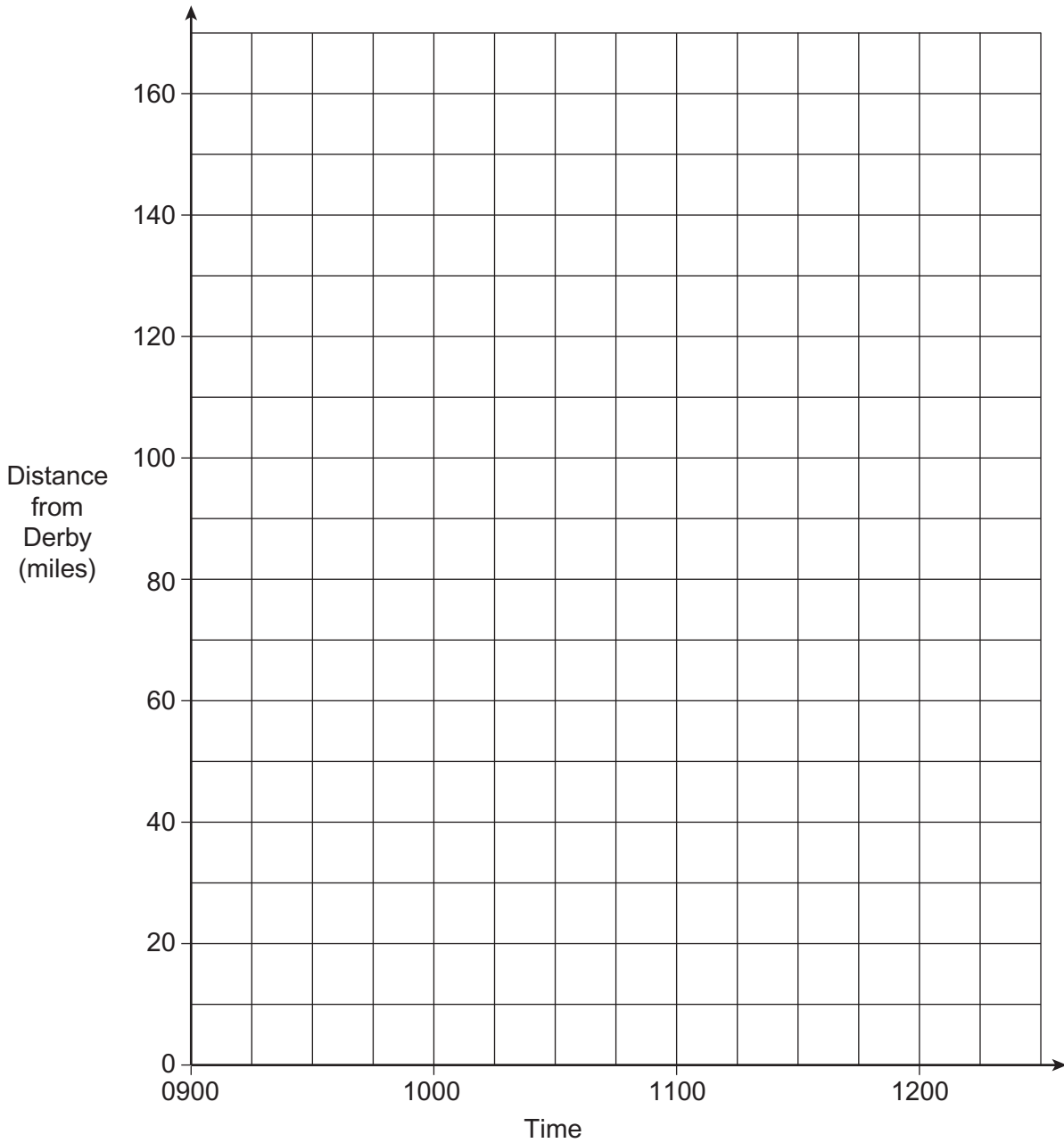
On the grid opposite, draw the distance-time graph for Train *A*.

[1 mark]

12 (b) On the grid opposite, draw the distance-time graph for Train *B*.

[1 mark]





12 (c) Use your graph to work out the speed of Train B.

[1 mark]

Answer _____ mph

3

Turn over ►



13 (a) Here is a linear sequence.

39 27 15 3

Work out the next **two** numbers in the sequence.

[2 marks]

Answer _____ and _____

13 (b) The term-to-term rule for a sequence is

multiply by 2

The sequence starts

a $2a$ _____ _____

The total value of the first three terms is 63

Work out the total value of the first four terms.

[3 marks]

Answer _____



***14** Kamil looks at two cars.

The normal price of Car A is £1550
The normal price of Car B is £1950

The cars are part of this offer.

Cars up to £1800
Sale price
20% off the normal price

Cars over £1800
Sale price
$\frac{1}{3}$ off the normal price

Special Offer
When the sale price is over £1250
Get an extra 5% off the sale price

After all reductions, which car is cheaper, Car A or Car B?
You **must** show your working.

[5 marks]

Answer _____

10

Turn over ►



- 15 Olga had 20 apps on her mobile.
She deleted 6 of them.

What percentage of her apps did she delete?

[2 marks]

Answer _____ %

- 16 Expand and simplify $4(3x + 7) - 5(x - 2)$

[3 marks]

Answer _____



17 (a) Anil and Bev share some money.

Anil gets $\frac{15}{80}$ of the money.

Work out the ratio Anil's money : Bev's money
Give your answer in its simplest form.

[2 marks]

Answer _____ : _____

17 (b) Jon and Nik share some money in the ratio 5 : 2
Jon gets £150 more than Nik.

How much money do they share altogether?

[3 marks]

Answer £ _____



18 A bag contains red discs, white discs and blue discs.

$\frac{1}{4}$ of the discs are red.

$\frac{1}{6}$ of the discs are white.

What is the **smallest** possible number of **blue** discs in the bag?

[3 marks]

Answer _____



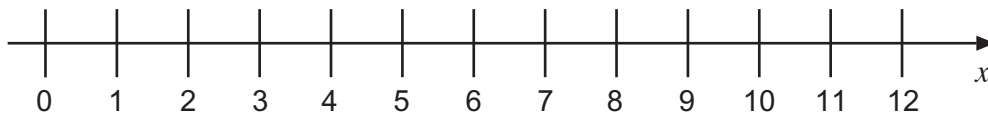
19 (a) Write down **all** the integers that satisfy $-3 \leq n < 2$

[1 mark]

Answer _____

19 (b) Show $2 < x \leq 10$ on the number line.

[2 marks]



END OF QUESTIONS



There are no questions printed on this page

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