AQA

GCSE
METHODS IN MATHEMATICS (LINKED PAIR)

F

Foundation Tier   Unit 1   Algebra and Probability

Wednesday 4 November 2015   Morning   Time allowed: 45 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. Cross through any work you do not want to be marked.
● You must **not** use your calculator in Section B. Your calculator must remain on the floor under your seat.
● When you have answered Section B you may work again on Section A but you must **not** use a calculator. It must remain on the floor under your seat.
● At the end of the examination tag Section A and Section B together with Section A on top.

Information
● The marks for questions are shown in brackets.
● The maximum mark for this paper is 40.
● The quality of your written communication is specifically assessed in Questions 23 and 26. These questions are indicated with an asterisk (*).
● You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.

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

Formulae Sheet: Foundation Tier

Set notation

A

A′

A ∩ B

A ∪ B

0 2
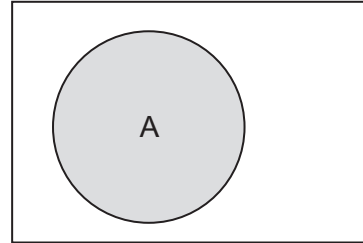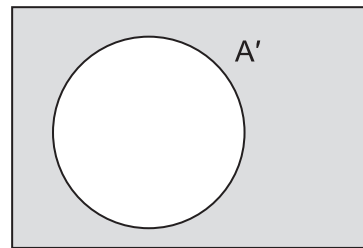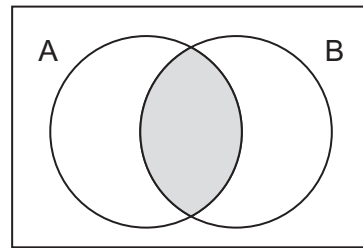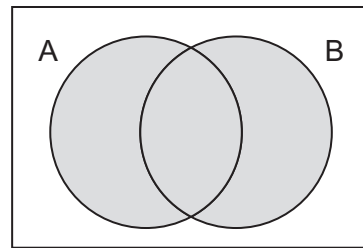
Answer **all** questions in the spaces provided.

15 (a)   Work out   129 + 317

[1 mark]

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Answer ....

15 (b)   Work out 18×6

[1 mark]

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Answer ....

2

Turn over ▶

15 (c)   Work out   25% of 68

[1 mark]

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Answer ....

15 (d)   Work out   8 + 6 ÷ 2

[1 mark]

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Answer ....

16 Put 1, 3 and 5 in the empty circles so that each line of three numbers adds up to 10

[2 marks]

You can practise on this diagram.
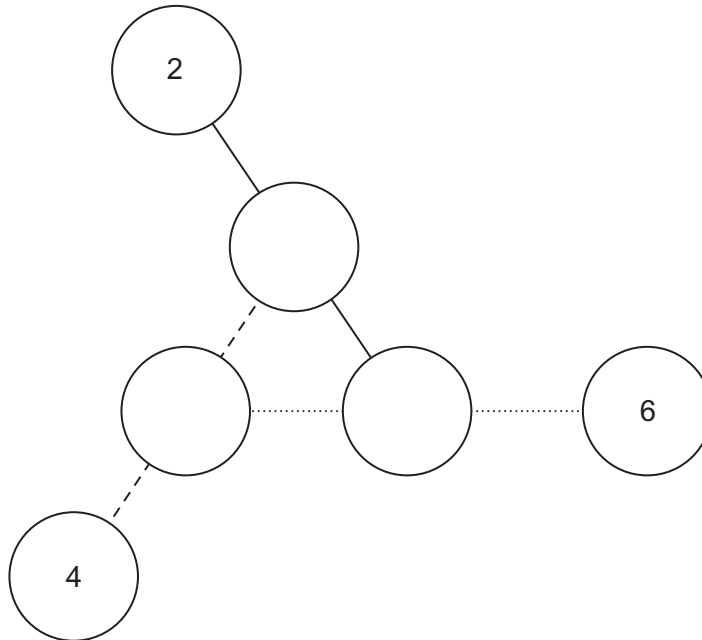
Put your answer on this diagram.
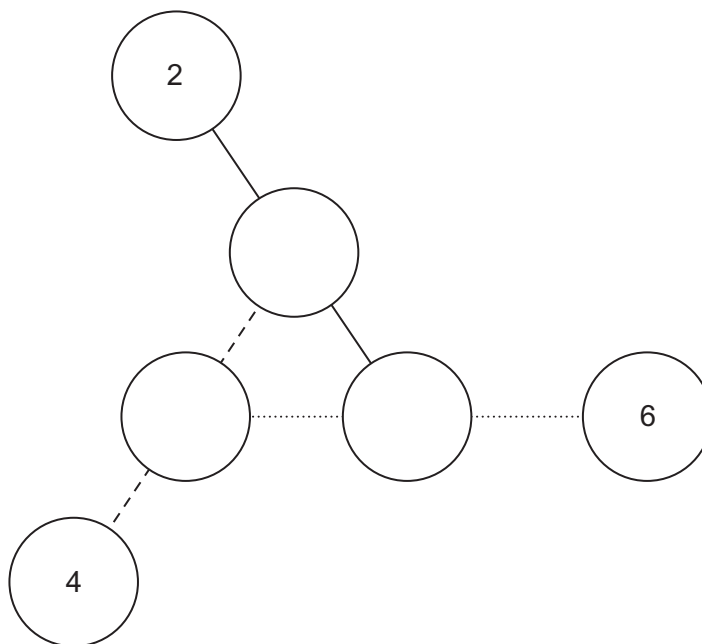
17
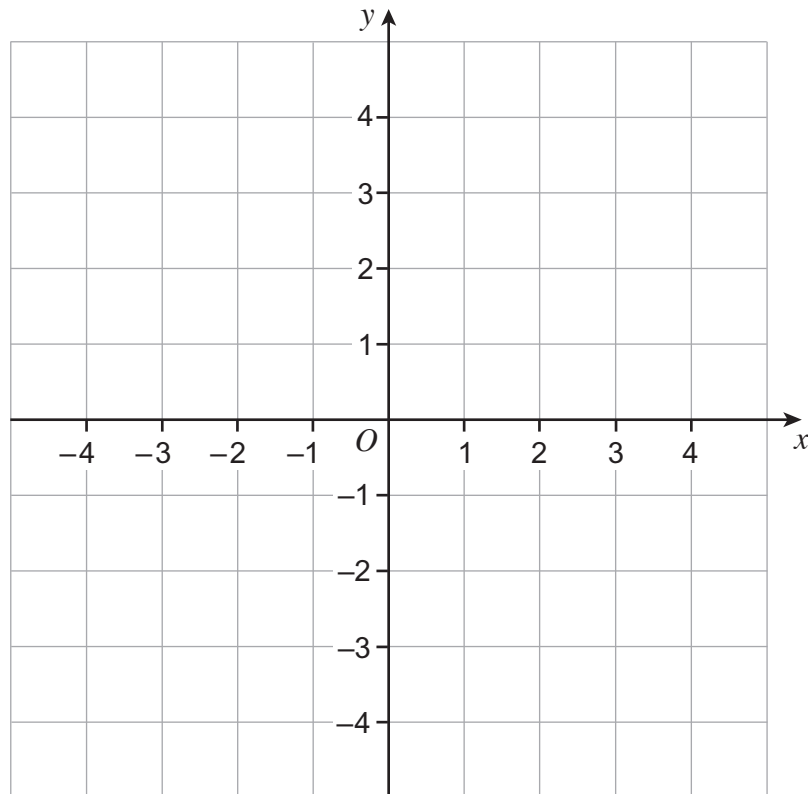
17 (a) Plot a point with a **negative** x-coordinate and a **positive** y-coordinate.

Label this point A.

[1 mark]

17 (b) Plot a point with an x-coordinate twice the y-coordinate.

Label this point B.

[1 mark]

17 (c) Plot a point where x-coordinate $\times$ y-coordinate = 0

Label this point C.

[1 mark]

18 (a) Circle the number that could **not** be a probability.
Give a reason for your answer.

[2 marks]

0   0.4   0.8   1.2

Reason ....

....

18 (b) The probability that X will happen is 0.3

What is the probability that X will **not** happen?

[1 mark]

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Answer ....

19 Put whole numbers in the boxes so the fractions

all have a different value

and

are in order from smallest to largest.

[2 marks]

$$\frac{1}{\boxed{}} \qquad \frac{1}{3} \qquad \frac{1}{\boxed{}} \qquad \frac{2}{\boxed{}} \qquad \frac{3}{4}$$

8

Turn over ▶

20   A bag contains 20 counters.

The counters are green, orange or yellow.

The probability of choosing a green counter is $\frac{1}{5}$

There are more orange counters than yellow counters.

Work out the greatest possible number of yellow counters in the bag.

[3 marks]

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Answer ....

21 (a) Tick a box to say if each statement is true or false.

[2 marks]

	True	**False**
64 is a square number	☐	☐
64 is a cube number	☐	☐
64 is a prime number	☐	☐

21 (b) Work out $5^3 - 5^2$

[2 marks]

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Answer ....

Turn over for the next question

7

Turn over ▶

22 Here is part of a multiplication table.

$$25 \times 14 = 350$$
$$26 \times 14 = 364$$
$$27 \times 14 = 378$$
$$28 \times 14 = 392$$
$$29 \times 14 = 406$$
$$30 \times 14 = 420$$

Use the table to work out the following.

22 (a) $378 \div 14$

[1 mark]

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Answer ....

22 (b) 2.9×1.4

[1 mark]

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Answer ....

22 (c)   364 ÷ 28

[1 mark]

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Answer ....

22 (d)   57 × 14

[2 marks]

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Answer ....

Turn over for the next question

5

Turn over ▶

*23

$A = 5x + 1$ $B = 7x - 9$ $C = 3x + 12$

The value of C is 28.5

Josh says,

 "A and C have the same value, but B has a different value."

Is Josh correct?
You **must** show your working.

[4 marks]

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24 Work out $\frac{5}{8} \times 4$

Give your answer as a mixed number in its simplest form.

[2 marks]

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Answer ....

25 Rearrange the formula $b = 2a - 3$ to make a the subject.

[2 marks]

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Answer ....

Turn over for the next question

8

Turn over ▶

26   A, B, C and D are the four possible results of a game.

The table gives the probabilities for B and C.

Result	A	B	C	D
Probability		0.12	0.28	

*26 (a)   P(A) = 2P(B)

Show that   P(D) = 3P(B)

[3 marks]

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26 (b)   The game was played 200 times.
Result C occurred 6 **more** times than expected.

How many times was C the result?

[3 marks]

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Answer ....

END OF QUESTIONS

6

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