AQA

# NEW PRACTICE PAPER SET 2

**Published November 2015**

Please write clearly, in block capitals.

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

Surname _____

Forename(s) _____

Candidate signature _____

# GCSE MATHEMATICS

**F**

Foundation Tier Paper 3 Calculator

Exam Date Morning Time allowed: 1 hour 30 minutes

## Materials

**For this paper you must have:**

- a calculator
- mathematical instruments.

## 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.

## Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- 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.

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

**1 (a)** Circle the percentage that is greater than $\frac{3}{4}$ and less than $\frac{4}{5}$

**[1 mark]**

75% 78% 80% 82%

**1 (b)** Circle the fraction that is greater than 0.3 and less than 0.4

**[1 mark]**

$\frac{1}{4}$ $\frac{1}{3}$ $\frac{3}{10}$ $\frac{1}{2}$

**2** Which statement is true?

Circle your answer.

**[1 mark]**

–6 is greater than –2 –6 is greater than 2

–2 is greater than –6 –2 is greater than 6

**3** $y$ is a whole number.

Circle the words that describe $5y$

**[1 mark]**

always odd  always even  could be odd or even

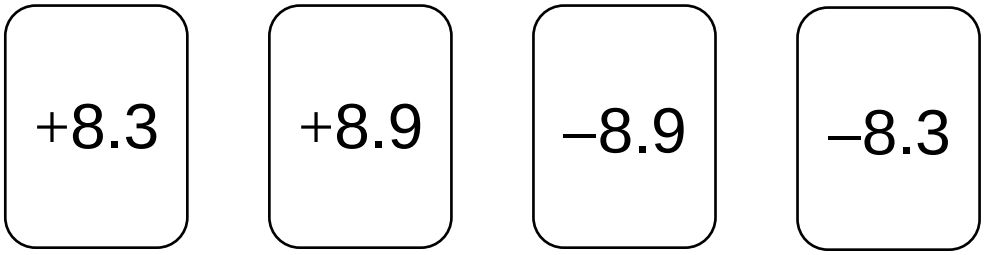
**4** Here is a bank statement.

| Date | Description | Credit £ | Debit £ | Balance £ |
|---|---|---|---|---|
| 13 Oct | Starting balance | | | 136.05 |
| 14 Oct | Cash paid in | 40.00 | | 176.05 |
| 15 Oct | Refund | 65.20 | | |
| 16 Oct | Go Shop | | 83.19 | |
| 17 Oct | Water bill | | 164.76 | |
| 18 Oct | Wage | 46.00 | | |

Complete the balance column.

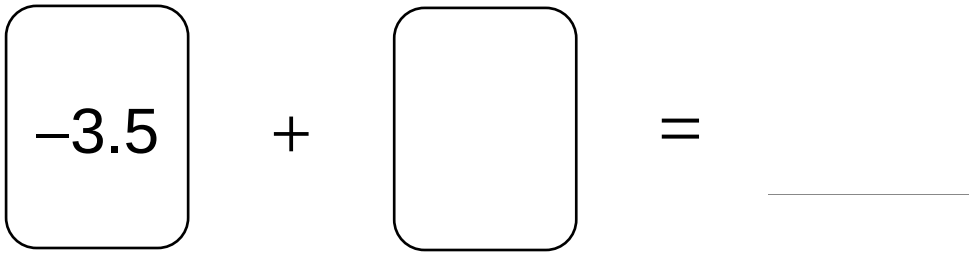
**[3 marks]**

**5** Here are some cards.



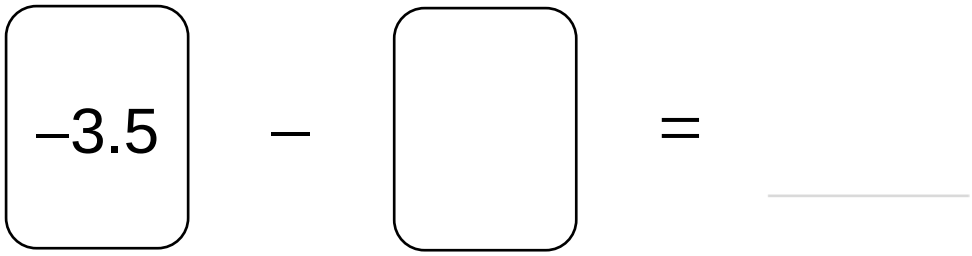

**5 (a)** Choose a card so that the answer is as small as possible.
Work out the answer.

**[2 marks]**

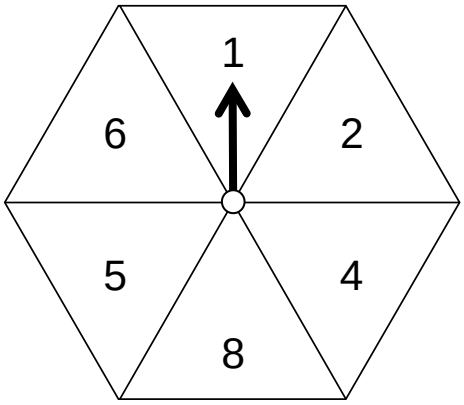



**5 (b)** Choose a card so that the answer is as small as possible.
Work out the answer.

**[2 marks]**



**6 (a)** A fair spinner has 6 equal sections.




The arrow on the spinner is spun.

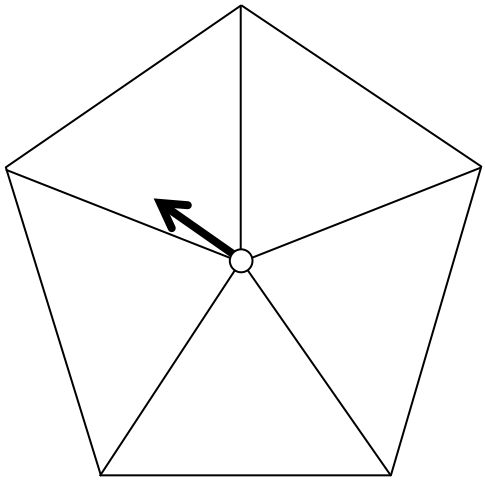
Complete each of the following sentences with the correct probability.

**[2 marks]**

The probability that the arrow will land on a factor of 8 is _____

The probability that the arrow will land on a prime number is _____

**6 (b)** This fair spinner has five equal sections.



Write a number on each section so that

the probability that the arrow lands on 3 is $\frac{2}{5}$

the range of the numbers is 3

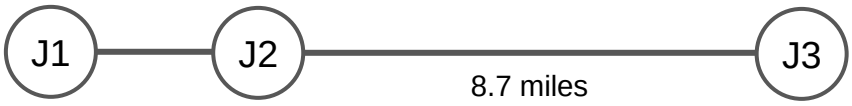
the sum of the numbers is 21

**[2 marks]**

**7** J1, J2 and J3 are three junctions on a motorway.

The distance from J2 to J3 is 8.7 miles.

Not drawn accurately



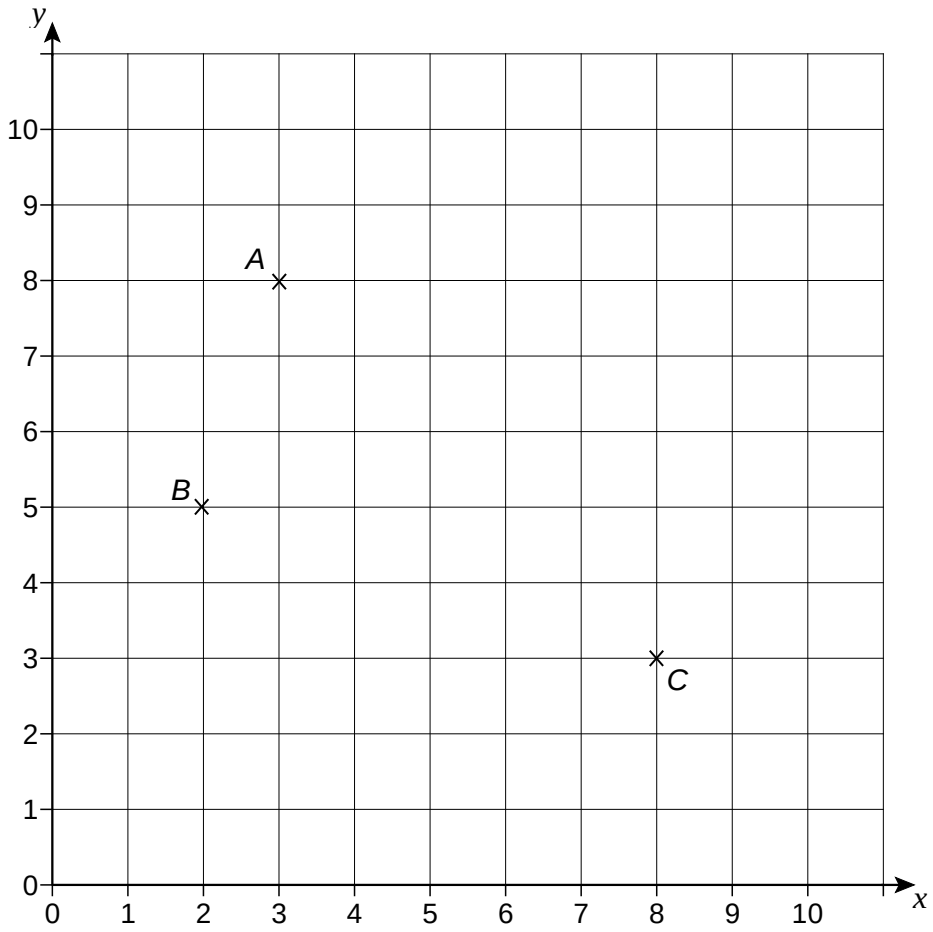

The distance from J1 to J2 is one-third of the distance from J2 to J3

Work out the distance from J1 to J3

**[3 marks]**

Answer _____ miles

**8** *A*, *B* and *C* are three vertices of a quadrilateral plotted on a centimetre grid.




**8 (a)** Plot *D* on the grid so that *ABCD* is a rectangle.

**[1 mark]**

**8 (b)** *E* is the midpoint of *BC*.

Circle the **two** answers that describe triangle *ABE*.

**[2 marks]**

scalene isosceles equilateral right-angled

**8 (c)** Circle the ratio area of triangle *ABE* : area of rectangle *ABCD*

**[1 mark]**

1 : 2 1 : 3 1 : 4 1 : 8

**9** In a class, the number of girls as a fraction of the number of boys is $\frac{5}{4}$

**9 (a)** Write down the number of boys as a fraction of the number of girls.

**[1 mark]**

Answer _____

**9 (b)** There are 20 girls in the class.

Work out the number of boys.

**[2 marks]**

_____

_____

_____

Answer _____

**10** I am thinking of a number ($n$).

I add 5 to my number.
I divide the answer by 4
My final answer is 3.625

Work out my final answer if I add 4 to my number ($n$) and then divide by 5

**[4 marks]**

_____

_____

_____

_____

_____

Answer _____

**11** The scale on a map is 1 : 200 000

Work out the number of kilometres represented by 2.5 cm on the map.

**[2 marks]**

Answer _____ km

**12** Here are the first three terms of a sequence.

23 −14 9

Each term is obtained by adding the previous two terms together.

**12 (a)** Work out the next **two** terms in the sequence.

**[1 mark]**

Answer _____ and _____

**12 (b)** The sequence continues.

How many negative terms are in the sequence?

Circle your answer.

1 2 3 4 more than 4

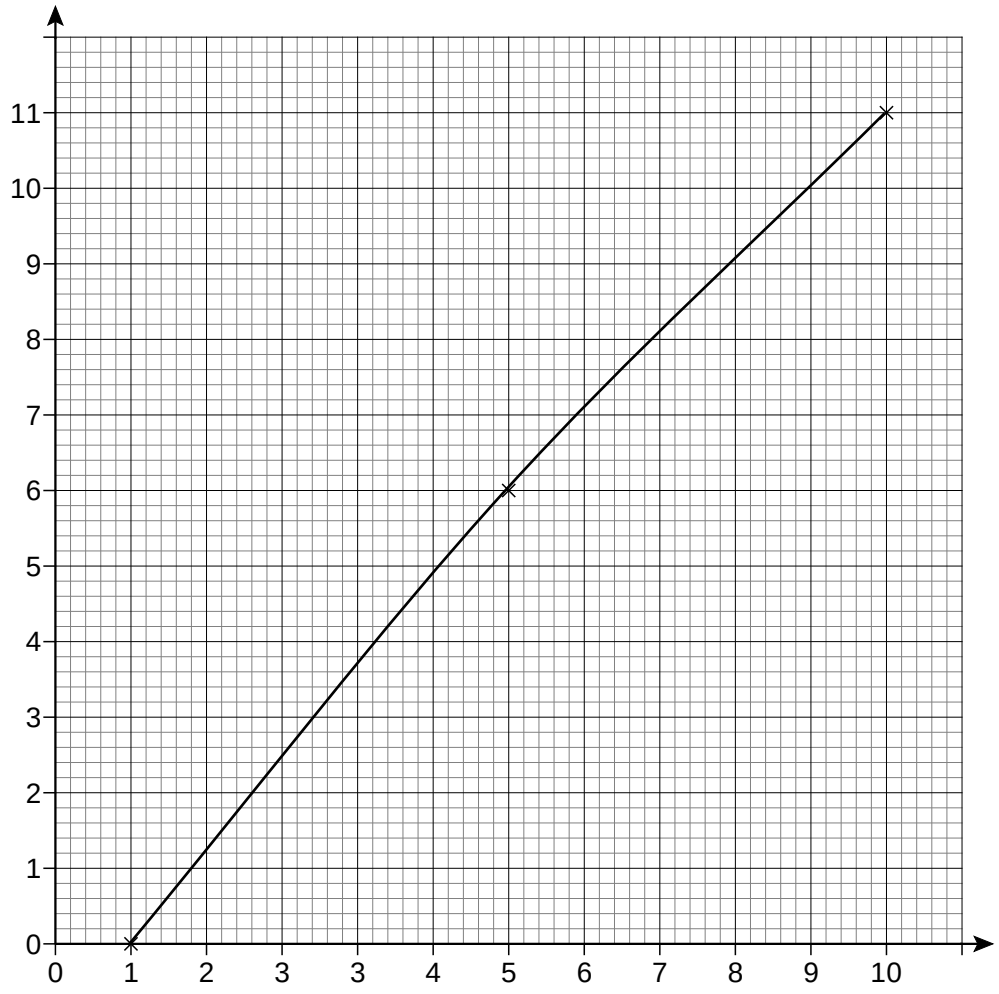
Give a reason for your answer.

**[2 marks]**

**13** Guy is using this table of results to draw the graph of $y = x + 1$ for values of $x$ from 0 to 10

| $x$ | 0 | 5 | 10 |
|---|---|---|---|
| $y$ | 1 | 6 | 11 |

This is his graph.




Write down **three** different mistakes he has made.

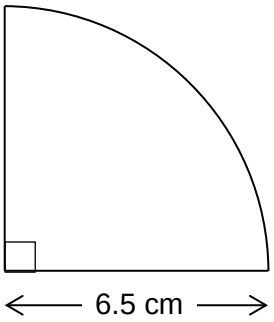
**[3 marks]**

Mistake 1 _____

Mistake 2 _____

Mistake 3 _____

**14** The diagram shows a quarter-circle with radius 6.5 cm




Work out the area of the quarter-circle.

**[3 marks]**

Answer _____ $cm^2$

**15** £800 is invested for 3 years at 2% **simple** interest per year.

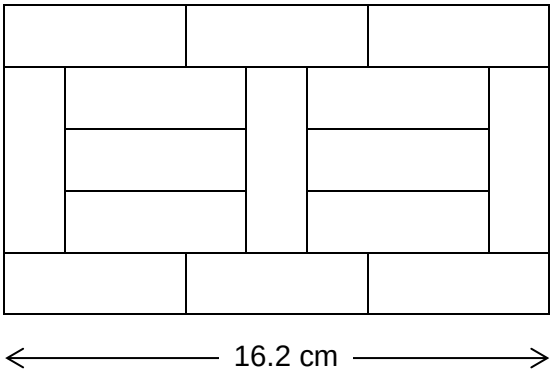
Work out the total interest.

**[3 marks]**

Answer £ _____

**16** A shape is made using 15 identical rectangles.

Not drawn accurately




Work out the area of the shape.

**[4 marks]**

Answer _____ $cm^2$

**17 (a)** Factorise $x^2 - y^2$

**[1 mark]**

Answer _____

**17 (b)** Solve $\frac{2x}{5} + 1 = 13$

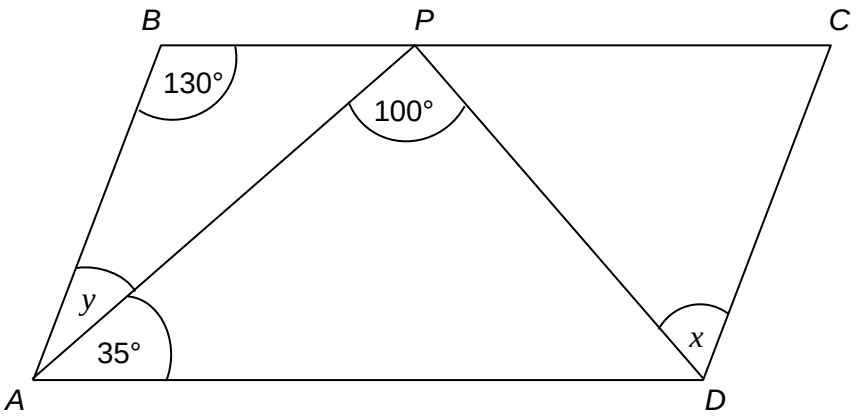
**[3 marks]**

$x =$ _____

**Turn over for the next question**

**18** The diagram shows a parallelogram *ABCD.*

Not drawn accurately




*P* is a point on *BC*.

**18 (a)** Work out the size of angle *x.*

You **must** show your working, which may be on the diagram.

**[3 marks]**

Answer _____ degrees

**18 (b)** Work out the size of angle *y.*

**[1 mark]**

Answer _____ degrees

**19** Paul won a race with a time of 71.3 seconds.

This time, $t$, is to the nearest tenth of a second.

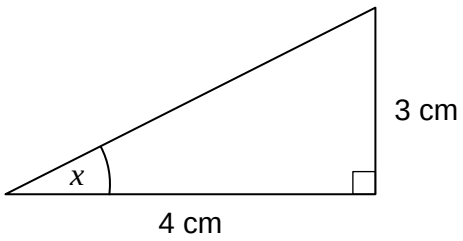
Complete the error interval due to rounding.

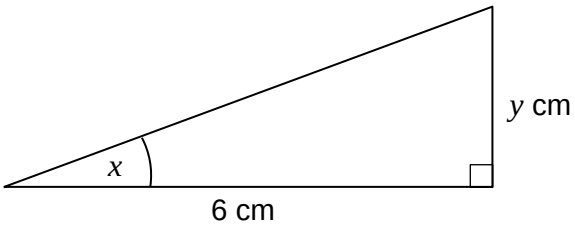
**[2 marks]**

Answer _____ $\leqslant t <$ _____

**20** These two right-angled triangles are similar.

Not drawn accurately




**20 (a)** Write down the value of tan $x$.

Give your answer as a fraction.

**[1 mark]**

Answer _____

**20 (b)** Work out the value of $y$.

**[2 marks]**

Answer _____ cm

**21** A line has the equation $y = 4x - 5$

**21 (a)** What is the gradient of the line?

Circle your answer.

**[1 mark]**

$-5$ $-4$ 4 5

**21 (b)** What is the $y$-intercept of the line?

Circle your answer.

**[1 mark]**

$-5$ $-4$ 4 5

**22** At a nursery, the mean age of 4 children is 31 months.

Katy joins the nursery.

The mean age of **all** 5 children is now 30 months.

Work out the age of Katy.

**[4 marks]**

Answer _____ months

**Turn over for the next question**

**23** John chooses a number at random from the digits 1 to 4

Matt also chooses a number at random from the digits 1 to 4

**23 (a)** Write down the probability that the **sum** of the two numbers chosen is a two-digit number.

**[1 mark]**

Answer _____

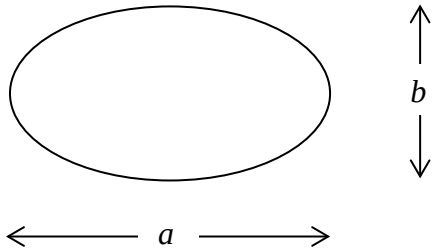
**23 (b)** Work out the probability that the **product** of the two numbers chosen is a two-digit number.

**[3 marks]**

Answer _____

**24** The area of an ellipse, width $a$ and height $b$, is given by

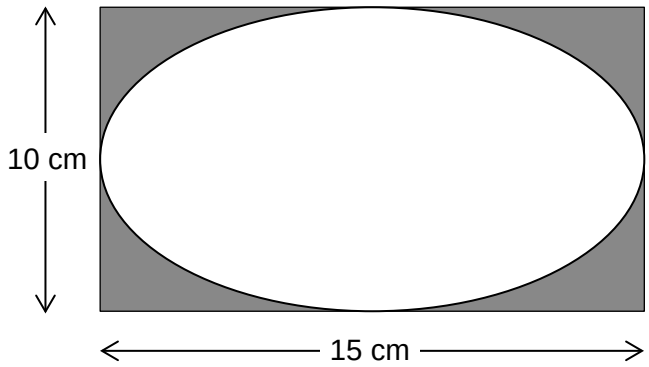
$$\text{Area} = \frac{\pi ab}{4}$$




A rectangular photograph measures 15 cm by 10 cm

It is put into a frame as shown.

Not drawn accurately




The part of the photograph that can be seen is an ellipse.

Work out the percentage of the photograph that can be seen.

**[3 marks]**

Answer _____ %

**25** At a concert

3 adult and 4 child tickets cost £23

1 adult and 5 child tickets cost £15

Work out the cost of an adult ticket and the cost of a child ticket.

**[4 marks]**

Cost of an adult ticket £ _____

Cost of a child ticket £ _____

**26** A doctor claims that the probability of having regular illness is doubled if you have poor sleep rather than good sleep.

In a survey, 16% of people with poor sleep had regular illness.

Here are the results for people with good sleep.

**Good Sleep**

| | Number of people |
|---|---|
| Regular illness | 24 |
| Not regular illness | 276 |

Comment on the doctor's claim.

You **must** show your working.

**[3 marks]**

**END OF QUESTIONS**

**There are no questions printed on this page**

**DO NOT WRITE ON THIS PAGE**
**ANSWER IN THE SPACES PROVIDED**