



Surname \_\_\_\_\_

Other Names \_\_\_\_\_

Centre Number \_\_\_\_\_

Candidate Number \_\_\_\_\_

Candidate Signature \_\_\_\_\_

For Examiner's Use

# GCSE MATHEMATICS

Foundation Tier Paper 1 Non-Calculator

**8300/1F**

Thursday 25 May 2017 Morning

Time allowed: 1 hour 30 minutes

For this paper you must have:

- mathematical instruments

You must NOT use a calculator.



At the top of the page, write your surname and other names, your centre number, your candidate number and add your signature.

[Turn over]



J U N 1 7 8 3 0 0 1 F 0 1

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## 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 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, tracing 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.

**DO NOT TURN OVER UNTIL TOLD TO DO SO**



Answer ALL questions in the spaces provided.

1 How many minutes are there in  $3\frac{1}{2}$  hours?

Circle your answer. [1 mark]

180.5

210

330

350

1

2 Work out  $\frac{1}{4} + 0.5$

Circle your answer. [1 mark]

0.30

0.6

0.75

0.9

1

3 Which of these shapes has the most sides?

Circle your answer. [1 mark]

Hexagon

Octagon

Rhombus

Trapezium

1



4 Solve  $x - 3 = 0$

Circle your answer. [1 mark]

$x = -3$

$x = 0$

$x = \frac{1}{3}$

$x = 3$

1

[Turn over]



5 Work out  $58 \times 73$  [3 marks]



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**Answer** \_\_\_\_\_

3

**[Turn over]**





6

500 people are asked if they drink coffee.

$\frac{9}{10}$  say Yes.

20% of the people who say Yes drink at least three cups each day.

6 (a) Complete the frequency tree on page 9. [4 marks]

6 (b) What fraction of the 500 people drink at least three cups of coffee each day?

Give your answer in its simplest form. [2 marks]

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Answer \_\_\_\_\_

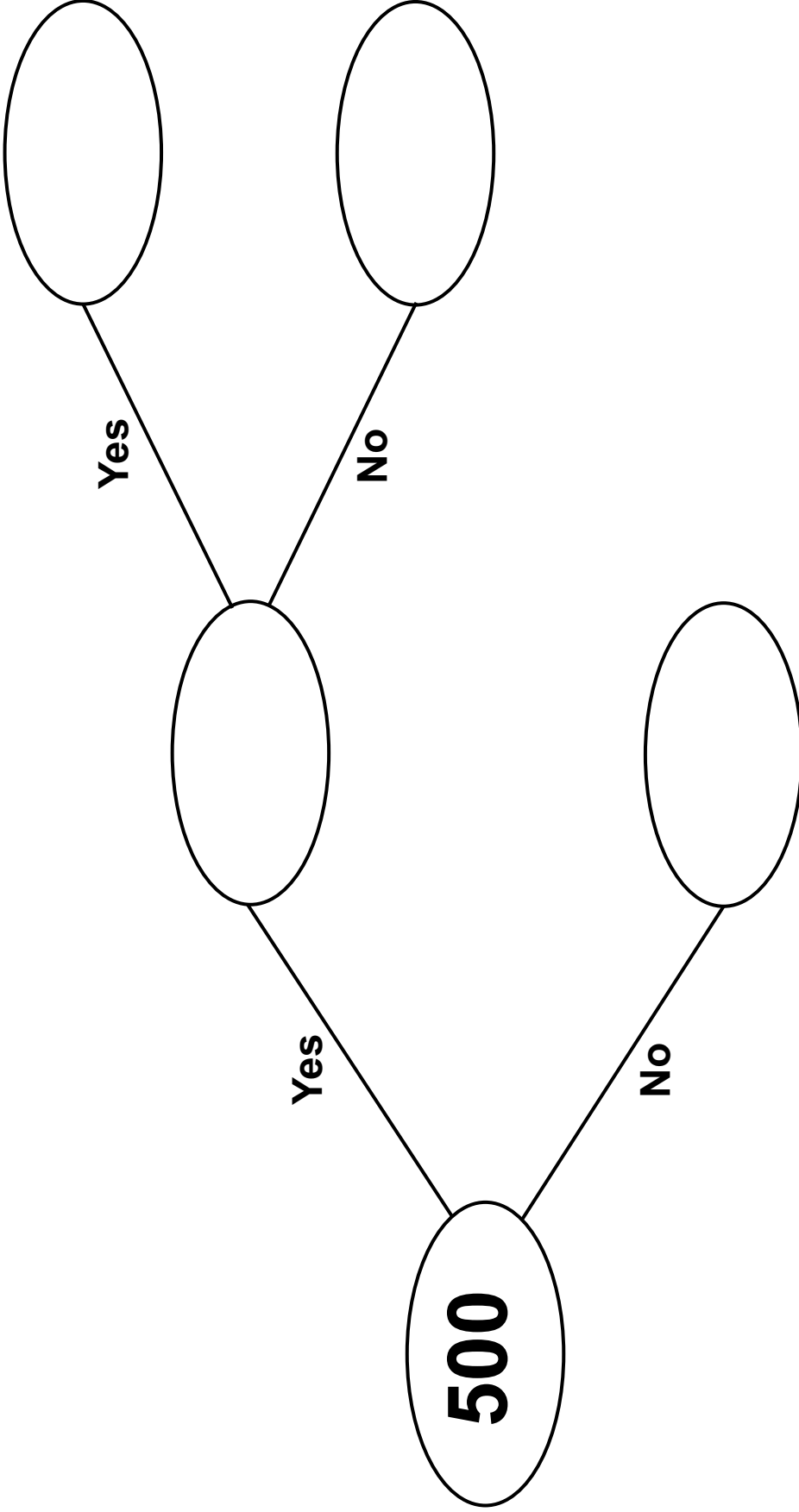




0 9

**Drink coffee**

**At least  
three cups  
each day**



7 By rounding each number to the nearest 10,  
estimate the answer to  $\frac{61 \times 47}{102}$

You MUST show your working. [2 marks]

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Answer \_\_\_\_\_

2



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**[Turn over]**



8 Nadia has £5 to buy pencils and rulers.

**PRICES**

**Pencils 8 p each**

**Rulers 30 p each**

**She says,**

**“I will buy 15 pencils.**

**Then I will buy as many rulers as possible.**

**With my change I will buy more pencils.”**

**How many pencils and how many rulers does she buy? [6 marks]**

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Answer \_\_\_\_\_ pencils, \_\_\_\_\_ rulers

6

[Turn over]



9 Work out  $25.68 \div 12$  [2 marks]

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Answer \_\_\_\_\_

2



10 Work out  $\frac{3}{8} \times 11$

Give your answer as a mixed number.  
[2 marks]

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Answer \_\_\_\_\_

2

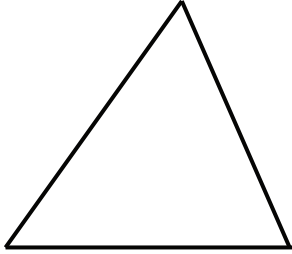
[Turn over]



11

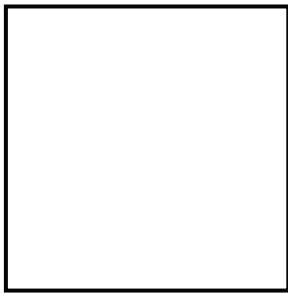
A triangle has perimeter 32 cm

Not drawn accurately.



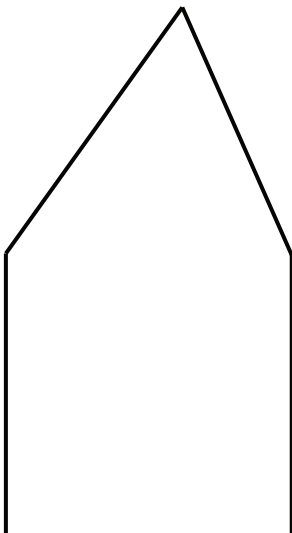
A square has perimeter 40 cm

Not drawn accurately.



Two sides of the shapes are put together to make a pentagon.

Not drawn accurately





Work out the perimeter of the pentagon.  
[4 marks]

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Answer \_\_\_\_\_ cm

4

[Turn over]



12 A football team has  $P$  points.

$$P = 3W + D$$

$W$  is the number of wins

$D$  is the number of draws

12(a) A team has 6 wins and 2 draws.

How many points does the team have?  
[1 mark]

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Answer 

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12 (b) After 33 games a different team has 53 points.

11 games were draws.

How many games has this team LOST?

[4 marks]

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Answer \_\_\_\_\_

5

[Turn over]



13       $2 + 0 + 1 + 7 = 10$

**Make the following calculations correct.**

**Use only the symbols +, −, ×, ÷ and ( )**  
**[3 marks]**

$$2 \quad 0 \quad 1 \quad 7 \quad = \quad -4$$

$$2 \quad 0 \quad 1 \quad 7 \quad = \quad 0$$

$$2 \quad 0 \quad 1 \quad 7 \quad = \quad 2^4$$

3

14      **A number is picked at random from the first four PRIME numbers.**

**A number is picked at random from the first four SQUARE numbers.**

**The two numbers are added to get a score.**



14 (a) Complete the table. [4 marks]

**Square numbers**

<b>Prime numbers</b>	<b>+</b>	<b>1</b>	<b>4</b>	<b>9</b>	
	<b>2</b>				
<b>3</b>			<b>12</b>		
<b>7</b>					

14 (b) What is the probability that the score is a PRIME number? [1 mark]

Answer \_\_\_\_\_

[Turn over]



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15

In a school show,

girls : boys = 1 : 1

girls who sing : girls who do not sing = 1 : 2

8 girls SING in the show.

How many students are in the show altogether?  
[3 marks]

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Answer \_\_\_\_\_

3

[Turn over]



16  $P$  and  $Q$  are points on the line  $3x + 2y = 6$

16 (a) Complete the coordinates of  $P$  and  $Q$ .  
[2 marks]

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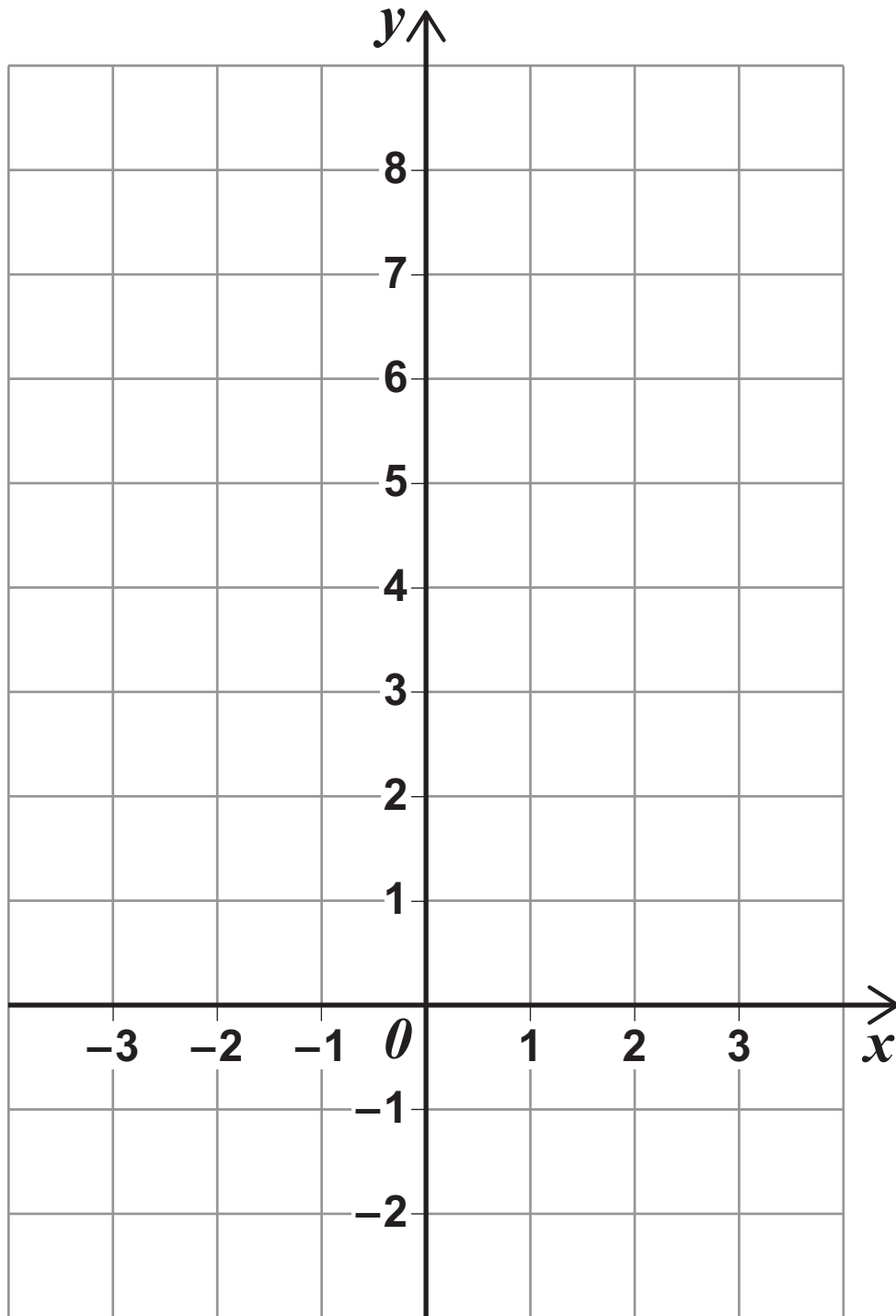
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$P(0, \underline{\quad})$        $Q(\underline{\quad}, 0)$





- 16(b) Draw the line  $3x + 2y = 6$  for values of  $x$  from  $-3$  to  $3$  [2 marks]



4
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[Turn over]



- 17 Circle the expression which does NOT simplify to  $y^3$  [1 mark]

$$y \times y \times y$$

$$y^4 \div y$$

$$y^2 \times y$$

$$y^6 \div y^2$$

1

- 18 Write the number

six million five thousand two hundred

in standard form. [2 marks]

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Answer \_\_\_\_\_

2



19(a) Use  $8 \text{ km/h} = 5 \text{ mph}$

to convert  $96 \text{ km/h}$  to  $\text{mph}$  [2 marks]

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Answer \_\_\_\_\_ mph

19(b)  $x \text{ km/h} = y \text{ mph}$

Use  $8 \text{ km/h} = 5 \text{ mph}$

to write a formula for  $y$  in terms of  $x$ .  
[2 marks]

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Answer \_\_\_\_\_

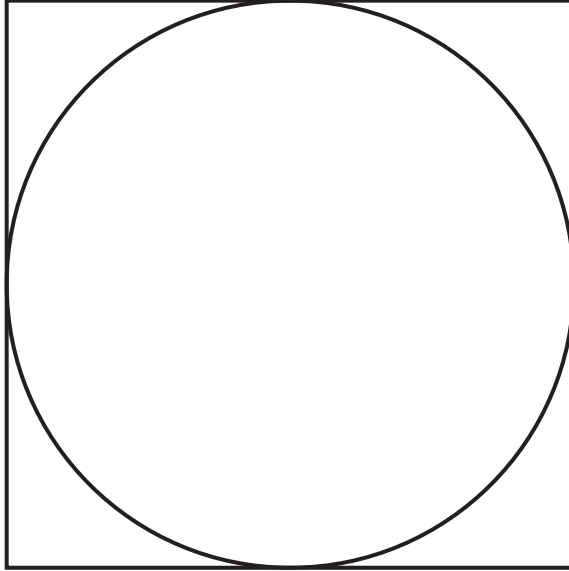
[Turn over]



20

Here is a circle touching a square.

Not drawn accurately.



The area of the square is  $64 \text{ cm}^2$

Work out the area of the circle.

Give your answer in terms of  $\pi$ . [3 marks]

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Answer \_\_\_\_\_  $\text{cm}^2$

3



21

Billy wants to buy these tickets for a show.

4 adult tickets at £15 each

2 child tickets at £10 each

A 10% booking fee is added to the ticket price.

3% is then added for paying by credit card.

Work out the TOTAL charge for these tickets when paying by credit card. [5 marks]

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Answer £ \_\_\_\_\_

5

[Turn over]



22 (a)      Density =  $\frac{\text{mass}}{\text{volume}}$

The mass of solid A is 6 times the mass of solid B.

The volume of solid A is 3 times the volume of solid B.

Complete the sentence. [1 mark]

The density of solid A is \_\_\_\_\_ times the density of solid B.

22 (b)      Average speed =  $\frac{\text{distance}}{\text{time}}$

If the distance is halved and the time is doubled, what happens to the average speed?

Circle your answer. [1 mark]

× 2

× 4

no change

÷ 2

÷ 4

2



23 A regular polygon has an exterior angle of  $20^\circ$

Work out the number of sides of the polygon.  
[2 marks]

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Answer \_\_\_\_\_

2
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24  $\frac{1}{2} : \frac{2}{3} = x : 1$

Circle the value of  $x$ . [1 mark]

$\frac{1}{3}$                        $\frac{3}{5}$

$\frac{3}{4}$                        $\frac{4}{3}$

1
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[Turn over]



- 25 The table shows information about the times for 10 people to complete a task.

Time, $t$ (minutes)	Frequency
$0 < t \leq 20$	1
$20 < t \leq 40$	6
$40 < t \leq 60$	3

These statements are about the mean and range of the actual times.

Tick the correct box for each statement.  
[4 marks]

True

False



The mean could be less than 20 minutes



The mean could be more than 40 minutes



The mean could be less than 40 minutes



The range could be more than 40 minutes



The range could be less than 40 minutes



The range could be more than 60 minutes





26

Write 36 as a product of prime factors.

Give your answer in index form. [3 marks]

Answer \_\_\_\_\_

3

27

Circle the value of  $\cos 90^\circ$  [1 mark]

0

 $\frac{1}{2}$  $\frac{\sqrt{3}}{2}$ 

1

1

[Turn over]



28 Solve the simultaneous equations. [3 marks]

$$2x + y = 18$$

$$x - y = 6$$

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Answer \_\_\_\_\_

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END OF QUESTIONS



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For Examiner's Use			
Examiner's Initials			
Question	Mark	Question	Mark
1		15	
2		16	
3		17	
4		18	
5		19	
6		20	
7		21	
8		22	
9		23	
10		24	
11		25	
12		26	
13		27	
14		28	
TOTAL		TOTAL	
	<b>TOTAL</b>		

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