AQA

Please write clearly in block capitals.

Centre number ☐☐☐☐☐ Candidate number ☐☐☐☐

Surname

Forename(s)

Candidate signature

I declare this is my own work.

GCSE MATHEMATICS

F

Foundation Tier   Paper 2 Calculator

Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:
- a calculator
- mathematical instruments
- the Formulae Sheet (enclosed).

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- 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.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- 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.

For Examiner's Use	
Pages	Mark
2–3	
4–5	
6–7	
8–9	
10–11	
12–13	
14–15	
16–17	
18–19	
20–21	
22–23	
24–25	
26–27	
TOTAL	
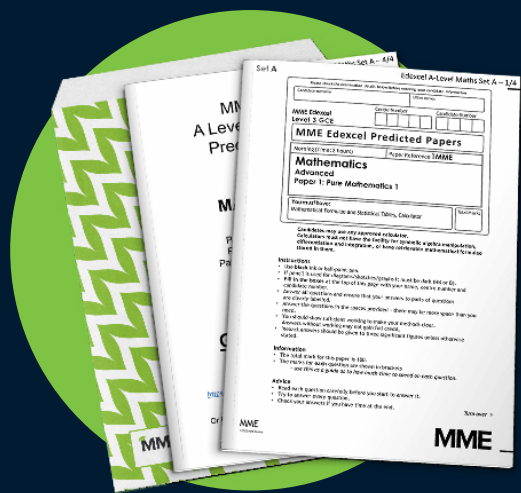
GCSE Maths Predicted Papers 2024
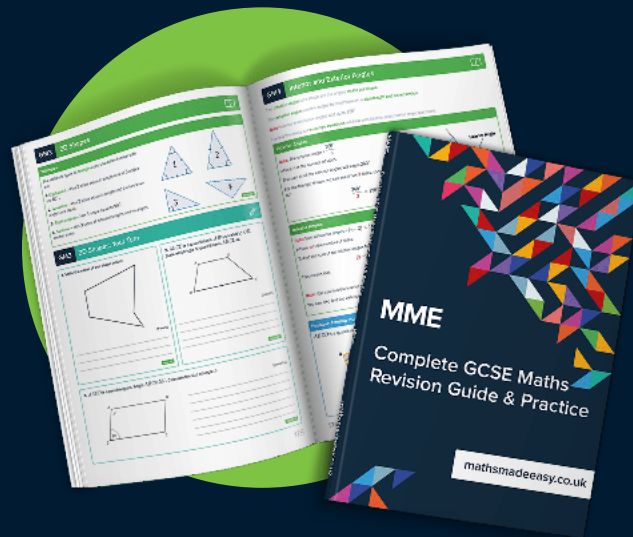
GCSE Maths Revision Guide
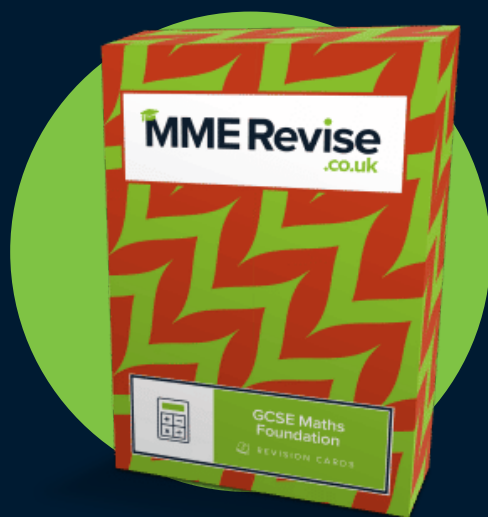
GCSE Maths Revision Cards
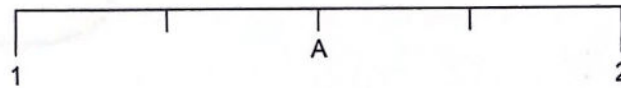
Course in a Box – GCSE Maths (Guaranteed Pass)

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

1   Here is a number line.

A

1   2

Which number is at A?

Circle your answer.

[1 mark]

1.2   1.4   1.5   1.8

2   Here is an expression $5a + 7b + 9c$

Which is the second term?

Circle your answer.

[1 mark]

a 7   7b   9

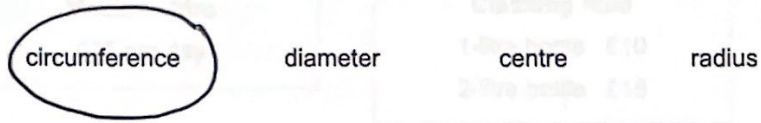3   How many hours are there in 5 days?

Circle your answer.

[1 mark]

35   120   150   300

4 Which of these parts of a circle is a curve?

Circle your answer.

[1 mark]

(circumference)   diameter   centre   radius

5 (a) Write $1\frac{4}{9}$ as an improper fraction.

[1 mark]

$1 = \frac{9}{9}, \quad 1\frac{4}{9} = \frac{9+4}{9} = \frac{13}{9}$

Answer ___13/9___

5 (b) Convert $\frac{7}{16}$ to a decimal.

[1 mark]

$7 \div 16 = 0.4375$

Answer ___0.4375___

5 (c) Round 2.84 to 1 decimal place.

[1 mark]

Answer ___2.8___

7

Turn over ▶

6   A machine to clean carpets can be hired.

Machine hire
£25 per day

Cleaning fluid
1-litre bottle   £10
2-litre bottle   £18

Rana wants to

　　hire the machine for 1 day

　　and

　　buy 5 litres of cleaning fluid.

Work out the **smallest** total amount she could pay.

[3 marks]

2 2litre bottles and a one Litre bottle.
$2 \times 18 + 10 = £46$. (As one 2 Litre is cheaper
than 2 one litres).

Machine hire - £25

$46 + 25 = £71$.

Answer £ __71.__

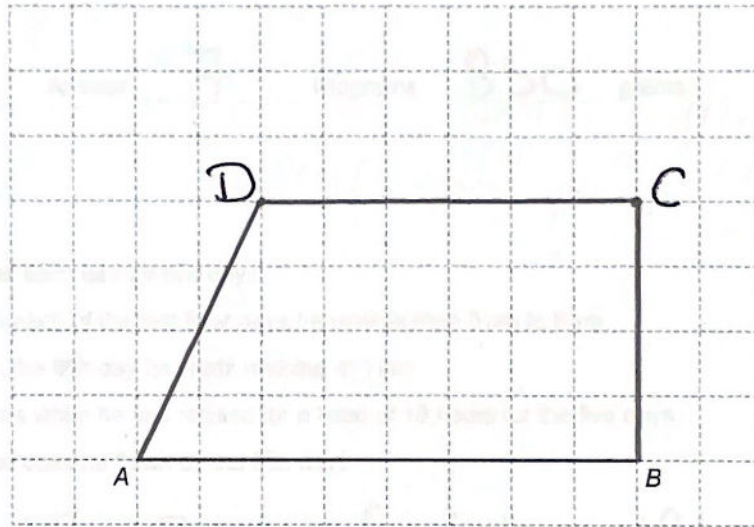Turn over for the next question

Turn over ▶

7   Quadrilateral *ABCD* has

- angle *ABC* = 90°
- *BC* = 4 cm
- *CD* is parallel to *BA*
- *CD* = 6 cm

Draw *ABCD* on the centimetre grid.

AB has been drawn for you.

[3 marks]

Turn over for the next question

6

8   The masses of some puppies were recorded.

The smallest mass was 7 kilograms 200 grams.

The range of the masses was 650 grams.

What was the **largest** mass?

Give your answer in kilograms and grams.

[2 marks]

$7200g + 650g = 7850g$

$= 7.850 kg.$

Answer ____7____ kilograms ____850____ grams

9 (a)   Ali revises each day for five days.

On each of the first **four** days he revises from 5 pm to 8 pm

On the fifth day he starts revising at 1 pm

He finishes when he has revised for a **total** of 18 hours for the five days.

What time does he finish on the fifth day?

[3 marks]

$5 \rightarrow 8 = 3$ hours for 4 days = 12 hours total.

$18 - 12 = 6$ hours on day 5.

Starts at 1pm so finishes at 7 pm,
6 hours later.

Answer ____7 pm____

Do not write outside the box

9 (b) Sofia is revising for Maths.

She tries to work out $3 \times (4 + 2)$

Here is her working.

$$3 \times (4 + 2) = 12 + 3$$
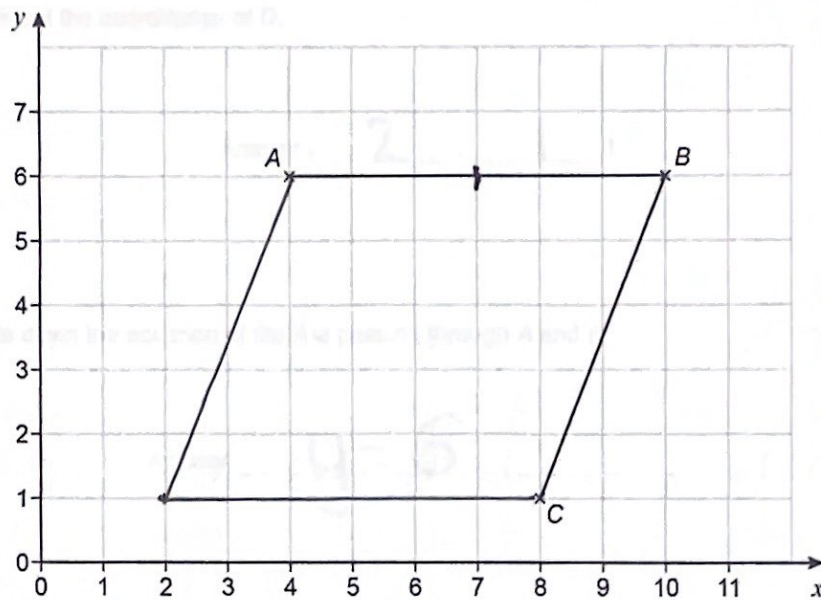$$= 15$$

What mistake has she made?

[1 mark]

Sofia should have added 4 and 2 together and then multiplied the sum by 3. $3 \times (4+2) = 3 \times 6 = 18$. Brackets are dealt with first by BIDMAS.

Turn over for the next question

6

Turn over ▶

10 Lines *AB* and *BC* are shown.

10 (a) Write down the coordinates of *C*.

[1 mark]

Answer (__8__ , __1__)

10 (b) Write down the coordinates of the midpoint of *AB*.

[1 mark]

Answer (__7__ , __6__)

10 (c)   *D* is the point on the grid that makes *ABCD* a parallelogram.

Work out the coordinates of *D*.

[1 mark]

Answer (___2___ , ___1___)

10 (d)   Write down the equation of the line passing through *A* and *B*.

[1 mark]

Answer ___$y = 6$___

Turn over for the next question

4

Turn over ▶

11 Nihal has savings of £168

He uses $\frac{5}{7}$ of his savings to buy sports equipment.

11 (a) Assume that he will use $\frac{1}{3}$ of the **rest** of the money to buy a shirt.

How much of his savings, in £, will he have left?

[3 marks]

$\frac{5}{7} \times 168 = 120$, $168 - 120 = £48$ left.

$\frac{1}{3} \times 48 = 16$, $48 - 16 = £32$.

Answer £ 32.

11 (b) In fact, he uses **more** than $\frac{1}{3}$ of the rest of the money to buy a shirt.

What does this tell you about how much of his savings he has left?

Tick **one** box.

[1 mark]

☐ It is more than the answer to part (a)

☐ It is the same as the answer to part (a)

☑ It is less than the answer to part (a)

☐ It is not possible to tell

Turn over for the next question

4

Turn over ▶

12 Sue is working with 2-digit numbers.

She multiplies the digits together to get an answer.

> For 63, she multiplies 6 by 3
> so 63 gives an answer of 18

12 (a) Write down a different 2-digit number that gives an answer of 18

[1 mark]

Answer ___36 $(3 \times 6 = 18)$.___

12 (b) Write down a 2-digit number that gives an answer of 0

[1 mark]

Answer ___20 $(2 \times 0 = 0)$___

12 (c) Write down a 2-digit number that gives an answer **greater** than 70

[1 mark]

Answer ___99 $(9 \times 9 = 81)$___

13   Steve and Molly each buy 480 tea bags.

Small packs	Large packs
80 tea bags for £1.90	160 tea bags for £3.25

Steve buys only small packs.

Molly buys only large packs.

In total, how much **more** than Molly does Steve pay?

[4 marks]

Steve: $480 \div 80 = 6$ packs.
$\quad 6 \times 1.9 = £11.40$.

Molly: $480 \div 160 = 3$ packs.
$\quad 3 \times 3.25 = £9.75$.

Difference: $11.4 - 9.75 = £1.65$.

Answer £ 1.65

7

Turn over ▶

14 Match each expression on the left with one on the right.

One has been done for you.

[3 marks]

Left	Right
$a + 3 + 2$	$a + 6$
$a + 3 \times 2$	$a + 5$
	$3a + 6$
$a \times 3 \times 2$	$6a$
$a \times 3 + 2$	$3a + 2$
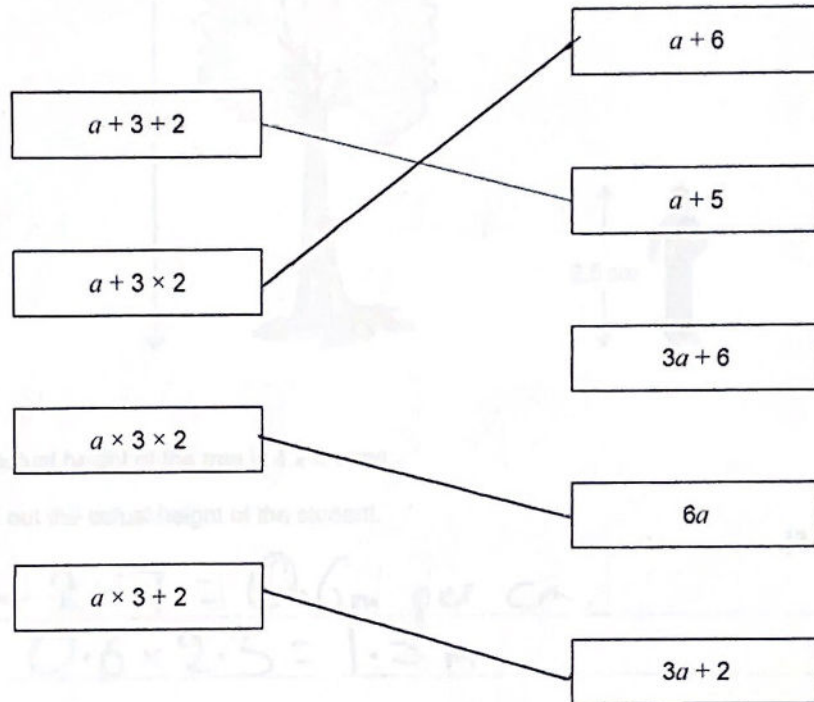
15 The scale drawing shows a tree and a student.

7 cm

2.5 cm
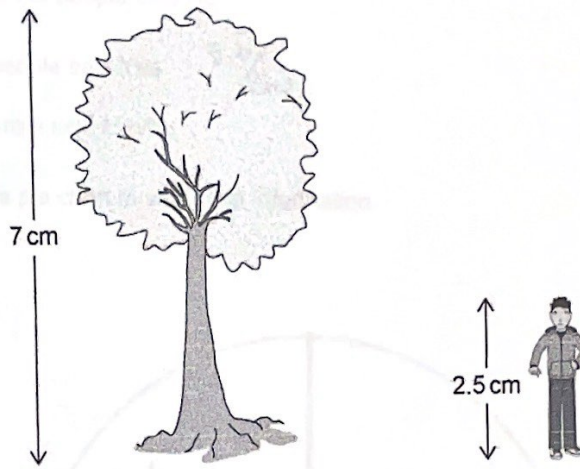
The actual height of the tree is 4.2 metres.

Work out the actual height of the student.

[3 marks]

$4.2 \div 7 = 0.6m$ per cm.

$0.6 \times 2.5 = 1.5 m.$

Answer _____ 1.5 _____ m
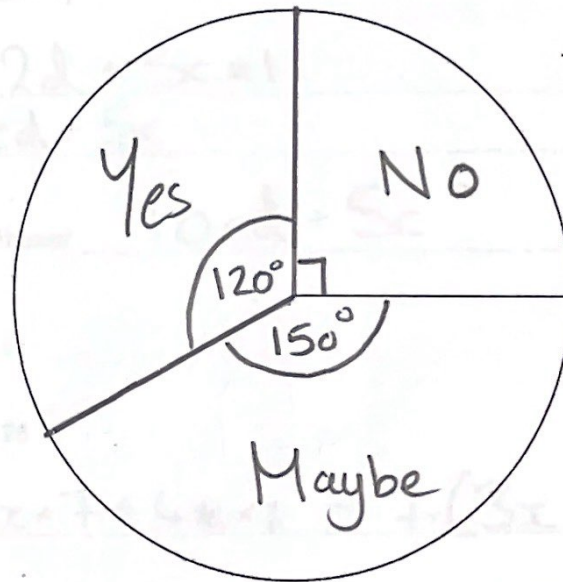
6

Turn over ▶

16 60 people were asked if they would vote in an election.

- $\frac{1}{4}$ of the people said No

- 20 people said Yes $= \frac{20}{60}$

- The rest said Maybe

Draw and label a pie chart to show this information.

[3 marks]

Yes No

120°

150°

Maybe

$\frac{20}{60} = \frac{120}{360} = 120°$

$\frac{1}{4} = \frac{90}{360} = 90°$

$360 - 120 - 90 = 150°$

17 (a) x is at least 7

Circle the correct inequality.

[1 mark]

$x < 7$ $\qquad$ $x \leqslant 7$ $\qquad$ $x > 7$ $\qquad$ $\boxed{x \geqslant 7}$

17 (b) Multiply out $\quad 5c(2d + 1)$

[2 marks]

$$5c \times 2d + 5c \times 1$$
$$= 10cd + 5c$$

Answer $\quad 10cd + 5c$

17 (c) Factorise $\quad 21x + 28$

[1 mark]

$$3x \times 7 + 4 \times 7 = 7 \times (3x + 4)$$

Answer $\quad 7(3x + 4)$

Turn over ▶

7

18 (a) The people at a party are either adults or children.

adults : children = 9 : 11

What percentage are adults?

[2 marks]

$$\frac{9}{9+11} = \frac{9}{20} = \frac{45}{100}$$

Answer _____ 45% _____ %

18 (b) The people at a different party are from Spain, France or Germany.

68% are from Spain

number from France = number from Germany

Work out   number from Spain : number from France

Give your answer in the form $n : 1$

[3 marks]

$100 - 68 = 32$, so $32 \div 2 = 16\%$ from France.

$68 : 16$

$68 \div 16 : 1$

$4.25 : 1$

Answer _____ 4.25 _____ : 1

Do not write outside the box

19 (a) Circle the point that is on the line $4x + y = 7$

[1 mark]

(2, 1) (2, –1) (1, 2) (–1, 2)

19 (b) Write down the coordinates of the y-intercept of the line $y = 3x + 8$

[1 mark]

Answer (__0__ , __8__)

19 (c) Work out the gradient of the line $2y = 10x$, $y = 5x$.

[1 mark]

Answer __5__

Turn over for the next question

8

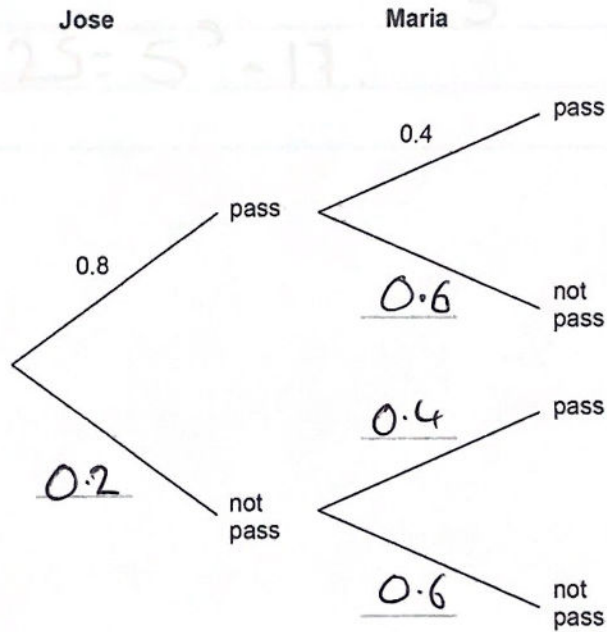**Turn over ▶**

20   Jose and Maria each take a test.

The probability that Jose passes is 0.8

The probability that Maria passes is 0.4

20 (a)   Complete the tree diagram.

[2 marks]

Jose   Maria

pass
0.4

pass
0.8
0·6   not
pass

0·4   pass

0·2   not
pass
0·6   not
pass

20 (b)   Work out the probability that they **both** pass.

[1 mark]

$0.8 \times 0.4 = 0.32$.

Answer 0.32

Turn over for the next question

Turn over ►

21 Show that 2125 can be written as

a cube number **multiplied** by a prime number between 10 and 20

[2 marks]

$$2125$$
$$5 \quad\quad 425$$
$$5 \quad\quad 85$$
$$5 \quad\quad 17$$

$$2125 = 5^3 \times 17.$$

Turn over for the next question

5

Turn over ▶

22   A school play takes place each day from Monday to Friday.

Here are the attendances on four of the days.

Monday	Tuesday	Wednesday	Thursday
72	83	88	97

72 + 83 + 88 + 97 = 340

For all **five** days, the mean attendance is 90

Work out the attendance on Friday.

[3 marks]

Let $x =$ Friday attendance

$$\frac{340 + x}{5} = 90$$

$340 + x = 450$

$x = 450 - 340 = 110$

Answer   110

23 Sam types a constant number of words per minute.

He takes 8 minutes to type a report of 416 words.

How long does it take him to type an essay of 1534 words?

Give your answer in minutes and seconds.

[3 marks]

$416 \div 8 = 52$ word per minute.

$1534 \div 52 = 29.5$ minutes

$= 29$ minutes 30 seconds.

Answer ___29___ minutes ___30___ seconds

24 $4y = 5x$

Which statement is correct?

$y = \frac{5}{4}x = \frac{125}{100}x$

Tick **one** box.

[1 mark]

☐ y is 80% of x

☑ y is 125% of x

☐ x is 20% of y

☐ x is 400% of y

7

Turn over ▶

25 Rosie makes phone calls to try to sell broadband.

Today, she made 120 calls.

The table shows the results.

Result of call	Frequency
Not answered	33
Answered but sale not made	81
Answered and sale made	6

25 (a) Write down the relative frequency that a call was **not answered**.

[1 mark]

$$\frac{33}{120}$$

Answer _____

25 (b) During the **rest of the week**, Rosie will make 500 calls.

Using the results in the table, how many sales does she expect to make during the **rest of the week**?

[2 marks]

$$\frac{6}{120} \times 500 = 25.$$

Answer _____25_____

26   Harry and Ellie each bought a printer and a hard drive.

Here is some information about how much they paid.

	Printer	Hard drive
Harry	£80	£25
Ellie	10% less than Harry	20% more than Harry

Ellie says,

"In total, I paid more than Harry because 20% is greater than 10%"

Is she correct?

Tick a box.

Yes ☐   No ☑

Show calculations to support your answer.

[2 marks]

Printer: $80 \times 0.9 = £72$.
HardDrive: $25 \times 1.2 = £30$
Ellie total = $72 + 30 = £102$.
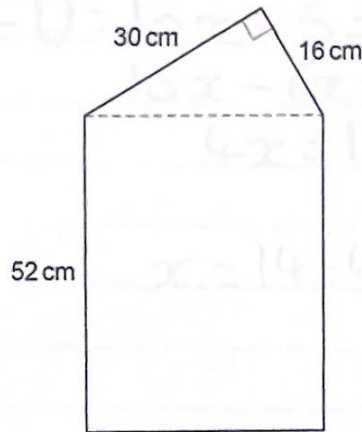Harry total = $80 + 25 = £105$.

So Ellie paid less

5

27   A shape is made by joining a right-angled triangle to a rectangle.

30 cm   16 cm

Not drawn
accurately

52 cm

Work out the area of the shape.

[5 marks]

The hypotenuse of the triangle is the width of the rectangle.

Area of triangle $= \frac{1}{2} \times 30 \times 16 = 240 \text{ cm}^2$.

Width of rectangle $= \sqrt{16^2 + 30^2} = 34 \text{ cm}$.

Area of Rectangle $= \cancel{2 \text{ to } 34}$
           $52 \times 34 = 1768 \text{ cm}^2$

Total Area $= 240 + 1768 = 2008 \text{ cm}^2$.

Answer   **2008** cm^2

28   Solve $5(2x - 1) = 6x + 9$

[3 marks]

$$5(2x - 1) = 10x - 5 = 6x + 9 \quad)-6x+5$$
$$10x - 6x = 9 + 5$$
$$4x = 14$$

$$x = 14 \div 4 = 3.5.$$

$x =$ _____3.5_____

END OF QUESTIONS

8