GCSE Mathematics Practice Tests: Set 14

Paper 1F (Non-calculator)

Time: 1 hour 30 minutes

You should have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. Tracing paper may be used.

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.
- **Calculators may not be used.**
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**

Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question*.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write $\dfrac{1}{5}$ as a decimal.

....

(Total for Question 1 is 1 mark)

2 Solve $x + 5 = 12$

$x = $ ....

(Total for Question 2 is 1 mark)

3 Simplify $5c \times d$

....

(Total for Question 3 is 1 mark)

4 Write 0.6 as a percentage.

....%

(Total for Question 4 is 1 mark)

5   Change 3 litres into millilitres.

....millilitres

(Total for Question 5 is 1 mark)

6   Write $\dfrac{24}{40}$ as a fraction in its simplest form.

....

(Total for Question 6 is 2 marks)

7 $c = 4$
   $d = 7$

Work out the value of $3c + 2d$

....

(Total for Question 7 is 2 marks)

8 The table gives the minimum temperature for January 2018 in each of six cities.

City	Minimum temperature (°C)
Barcelona	3
Donetsk	−10
Mexico City	−1
Mombasa	22
New York	−15
Sydney	15

(*a*) Which of these six cities has the lowest minimum temperature?

....
(1)

(*b*) Work out the difference between the minimum temperature of Donetsk and the minimum temperature of Sydney.

...°C
(1)

The minimum temperature in Edmonton for January 2018 was 50 °C less than the minimum temperature in Mombasa for January 2018

(*c*) Work out the minimum temperature in Edmonton for January 2018

....°C
(1)

(Total for Question 8 is 3 marks)

9 The pictogram shows information about the number of books sold in a shop each day from Monday to Thursday last week.

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Key: represents 20 books
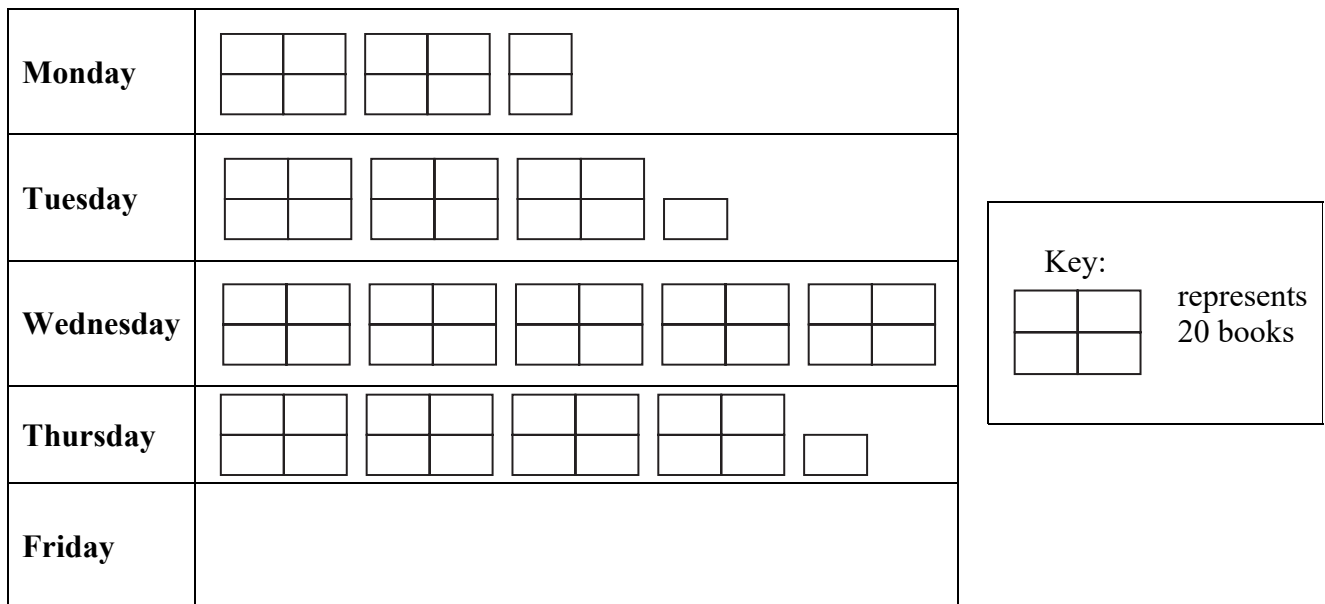
(*a*) How many books were sold on Wednesday last week?

....

(1)

35 books were sold in the shop on Friday last week.

(*b*) Show this information on the pictogram.

(1)

Last week

some books were sold in the shop on Saturday

no books were sold in the shop on Sunday

a total of 500 books were sold in the shop.

(*c*) Work out the number of books that were sold in the shop on Saturday last week.

....

(3)

(Total for Question 9 is 5 marks)

10 Here is a list of numbers.

| 1 | 17 | 21 | 25 | 26 | 31 | 39 | 64 |

From this list, write down

(*a*) an even number

....
(1)

(*b*) a multiple of 3

....
(1)

(*c*) a prime number

....
(1)

(*d*) a cube number

....
(1)

(Total for Question 10 is 4 marks)

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11 Simplify $8k + 5m - 2k + 6m$

....

(Total for Question 11 is 2 marks)

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12 The diagram shows three points, *A*, *B* and *C*, marked on a grid.
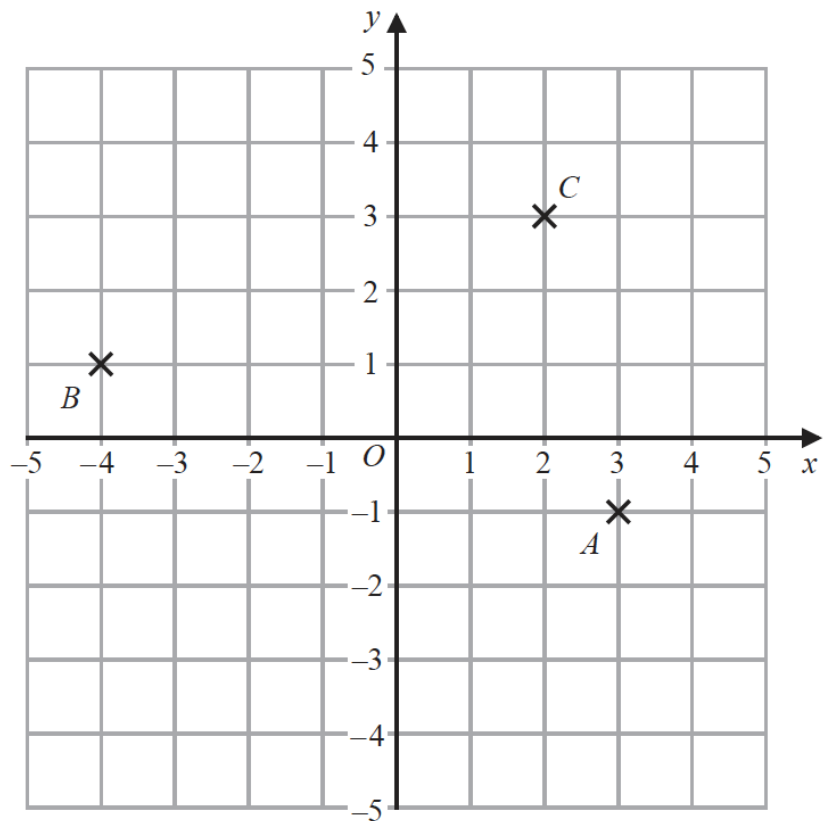
(*a*) Write down the coordinates of point *A*.

(........................ , ...)
(1)

The coordinates of the point *D* are (–2, –4)

(*b*) On the grid, mark with a cross (✗) the position of *D*.
Label the cross *D*.
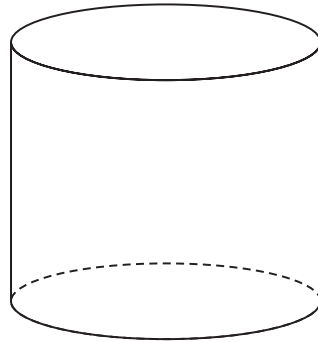
(1)

(*c*) Find the coordinates of the midpoint of *BC*.

(........................ , ...)
(2)

(*d*) On the grid, draw the line with equation *x* = 4

(1)
(Total for Question 7 is 5 marks)

13 (*a*) Write down the mathematical name of this 3-D shape.

....
(1)

Here is a solid cuboid.
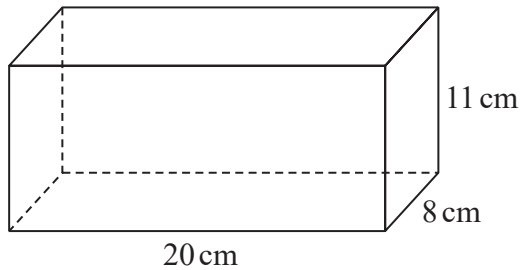
Diagram **NOT** accurately drawn

11 cm

8 cm

20 cm

(*b*) (i) How many faces has the cuboid?

....

(ii) How many vertices has the cuboid?

....
(2)

(*c*) Work out the volume of the cuboid.

.... cm³
(2)

(Total for Question 13 is 5 marks)

14 The numbers from 1 to 14 are shown in the Venn diagram.
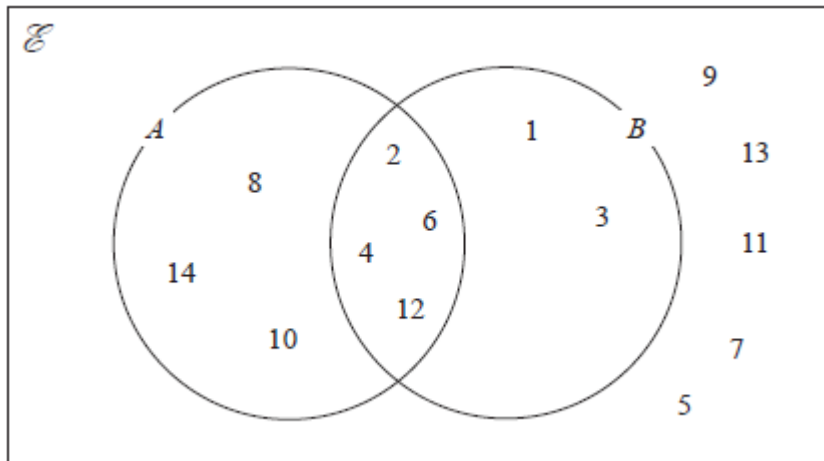
(a) List the members of the set $A \cap B$

....
(1)

A number is picked at random from the numbers in the Venn diagram.

(b) Find the probability that this number is in set A but is **not** in set B.

....
(2)

(Total for Question 14 is 3 marks)

15 There are only blue bricks and white bricks in a box.
The ratio of the number of blue bricks to the number of white bricks is 3 : 7

What fraction of the bricks in the box are blue bricks?

....

(Total for Question 15 is 1 mark)

16 Paula asks 16 members of her class the number of pets they each have.
Here are her results.

1	2	2	4	0	1	2	1
3	3	4	1	1	0	3	2

(*a*) Complete the frequency table for her results.

Number of pets	Tally	Frequency
0		
1		
2		
3		
4		

(2)

(*b*) Write down the mode for the number of pets.

....

(1)

(*c*) Work out the range for the number of pets.

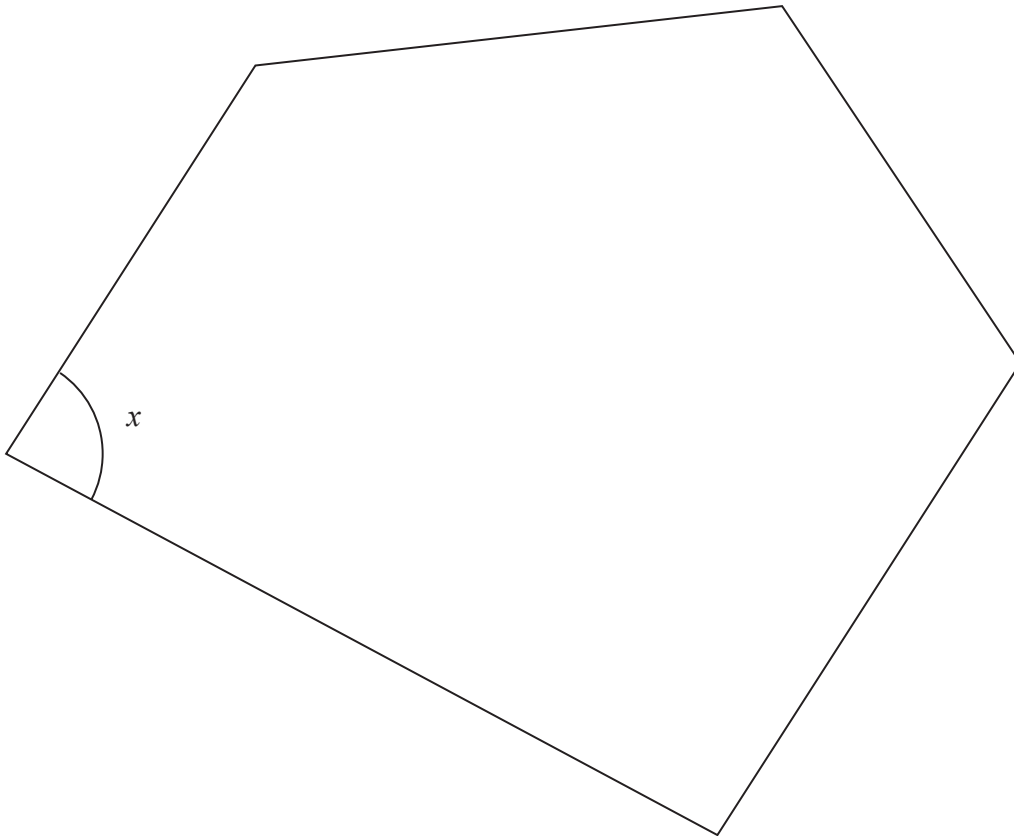...

(1)

(Total for Question 16 is 4 marks)

17 Here is a polygon with five sides.

(*a*) Write down the mathematical name of a polygon with five sides.

....

(1)

(*b*) Measure the size of the angle marked *x*.

....°
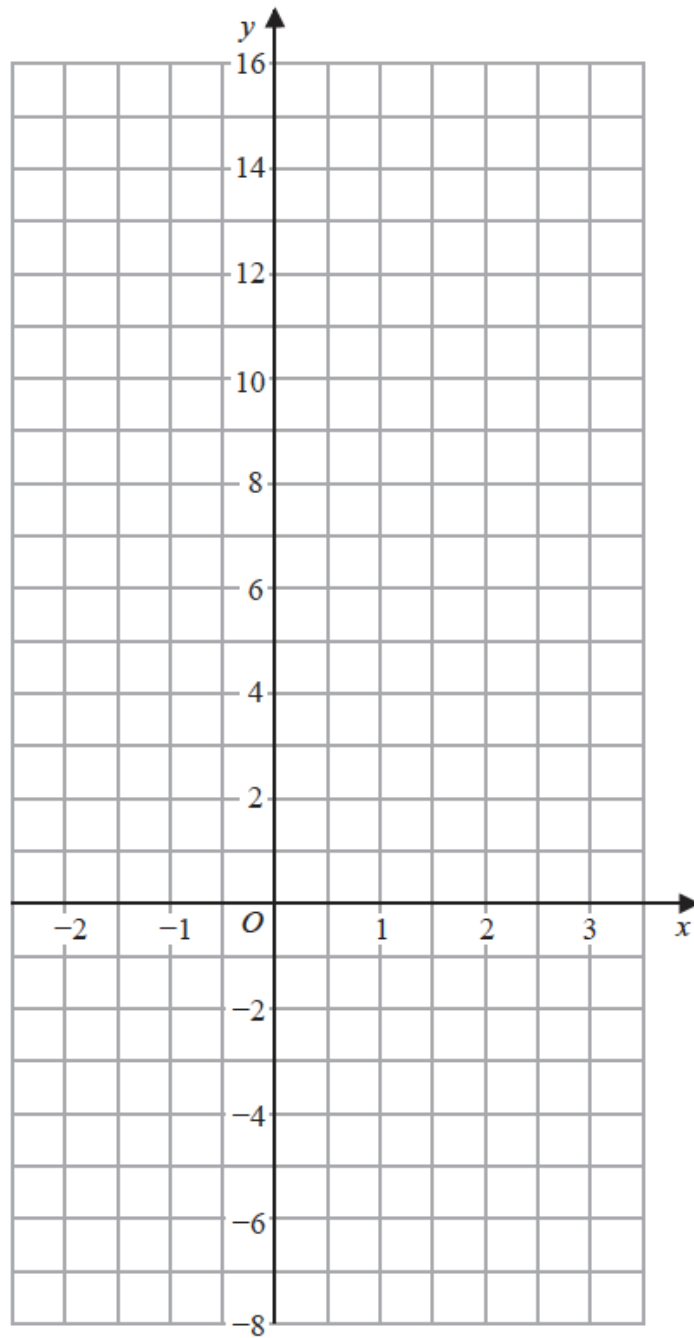
(1)

Two sides of the polygon are parallel.

(*c*) On the polygon, mark with arrows (>>) this pair of parallel lines.

(1)

(Total for Question 17 is 3 marks)

18 On the grid, draw the graph of $y = 7 - 4x$ for values of x from -2 to 3

(Total for Question 18 is 3 marks)

19   There are 6 eggs in a small box of eggs.
There are 12 eggs in a large box of eggs.

Alex buys g small boxes of eggs and h large boxes of eggs.
He buys a total of T eggs.

Write down a formula for T in terms of g and h.

....

(Total for Question 19 is 3 marks)

20   (*a*) Write down all the factors of 9

....
(1)

(*b*) Find the lowest common multiple (LCM) of 15 and 70

....
(2)

(Total for Question 20 is 3 marks)

21
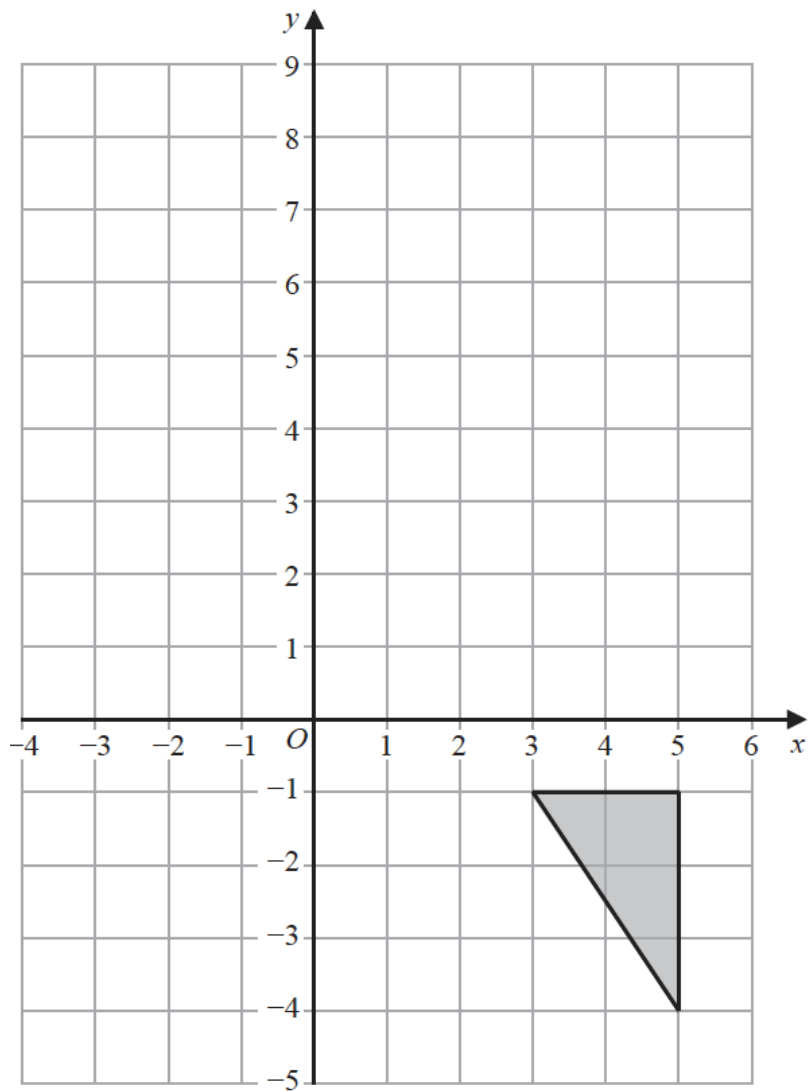
On the grid, reflect the shaded triangle in the line with equation $y = 2$

(Total for Question 21 is 2 marks)

22 (*a*) Show that $\dfrac{2}{5} \div \dfrac{11}{20} = \dfrac{8}{11}$

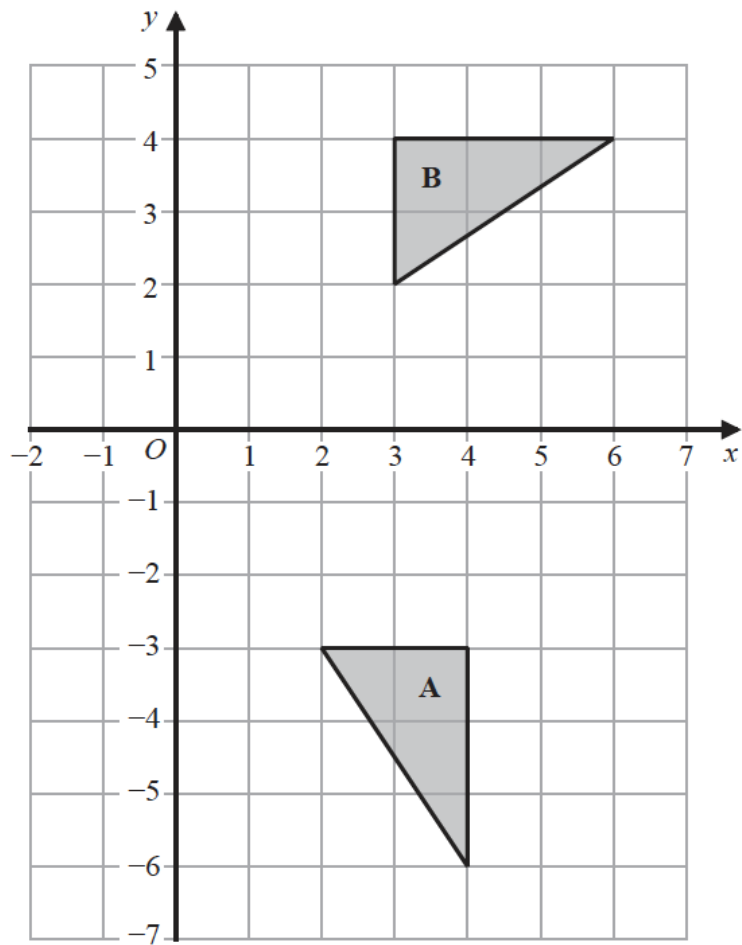**(2)**

(*b*) Show that $\dfrac{3}{8} + \dfrac{1}{24} = \dfrac{5}{12}$

(Total for Question 22 is 4 marks)

23 Solve $5(4 - x) = 7 - 3x$

$x =$ ....

(Total for Question 23 is 3 marks)

24

Describe fully the single transformation that maps triangle **A** onto triangle **B**.

....

....

....

(Total for Question 24 is 3 marks)

25 Solve the inequality $4x + 7 > 2s$

....

(Total for Question 25 is 2 marks)

26 Solve the simultaneous equations

$$4x + 3y = 17$$
$$x + 2y = 5$$

Show clear algebraic working.

$x =$ ....

$y =$ ....

(Total for Question 26 is 3 marks)

27 Make y the subject of the formula $c = 5y - h$

....

(Total for Question 27 is 2 marks)

28 Factorise fully $\quad 16m^3g^3 + 24m^2g^5$

....
(Total for Question 28 is 2 marks)

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29 (*a*) Simplify $g^6 \times g^4$

....
(1)

(*b*) Simplify $\quad (3cd^4)^2$

....
(2)
(Total for Question 29 is 3 marks)

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30 (*a*) Factorise $\quad y^2 - 2y - 48$

....
(2)

(*b*) Hence solve $\quad y^2 - 2y - 48 = 0$

....
(1)
(Total for Question 30 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

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