A

AQA

Surname _____

Other Names _____

Centre Number _____

Candidate Number _____

Candidate Signature _____

I declare this is my own work.

GCSE MATHEMATICS

F

Foundation Tier Paper 1 Non-Calculator

8300/1F

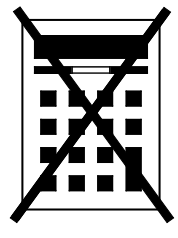
Time allowed: 1 hour 30 minutes

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

[Turn over]

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 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.

DO NOT TURN OVER UNTIL TOLD TO DO SO

Answer ALL questions in the spaces provided.

1 Circle the answer to 0.02×100 [1 mark]

0.2 **2** **20** **200**

2 Circle the expression that is equal to $x + x + x - x + x$ [1 mark]

x $2x$ $3x$ $4x$

3 What is 260 millimetres in centimetres?

Circle your answer. [1 mark]

0.26 cm **2.6 cm**

26 cm **2600 cm**

4 Which shape CAN have sides with lengths that are all different?

Circle your answer. [1 mark]

trapezium kite

parallelogram rhombus

5 Work out (–8) × 5 [1 mark]

Answer _____

6 **Luke buys 4 apples and 5 bananas.**

The total cost is £3.70

Each apple costs 35p

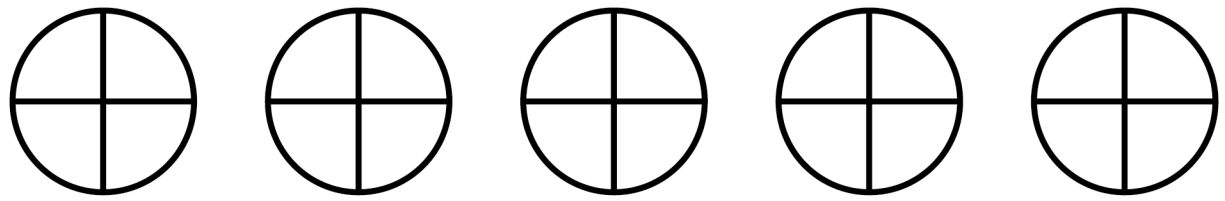
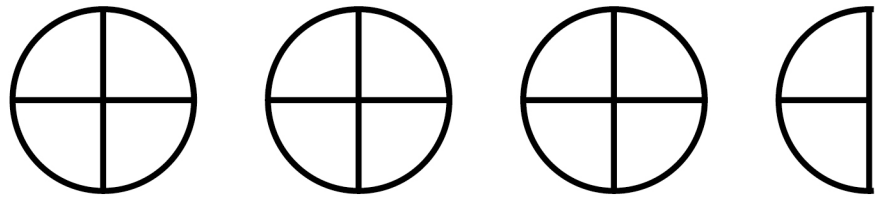
Work out the cost in pence of each banana. [4 marks]

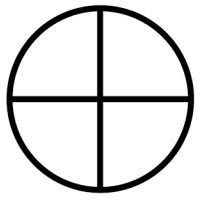
Answer _____ **pence**

[Turn over]

7 Rashid counted the pieces of homework he had done in three subjects.

He draws a pictogram to show the results.

Maths	
English	
Geography	

KEY:  **represents 4 pieces of homework**

7(a) Rashid had done 5 pieces of Geography homework.

Show this information on the pictogram. [1 mark]

[Turn over]

BLANK PAGE

7(b) **Rashid spent 30 minutes on each piece of homework.**

Work out the TOTAL time he spent on homework for these three subjects.

Give your answer in hours and minutes. [3 marks]

Answer _____ hours _____ minutes

8

8 A travel company is taking some passengers on a trip.

They can use coaches or minibuses.

Each coach can carry 53 passengers.
Each minibus can carry 12 passengers.

The passengers going on the trip would exactly fill 3 coaches.

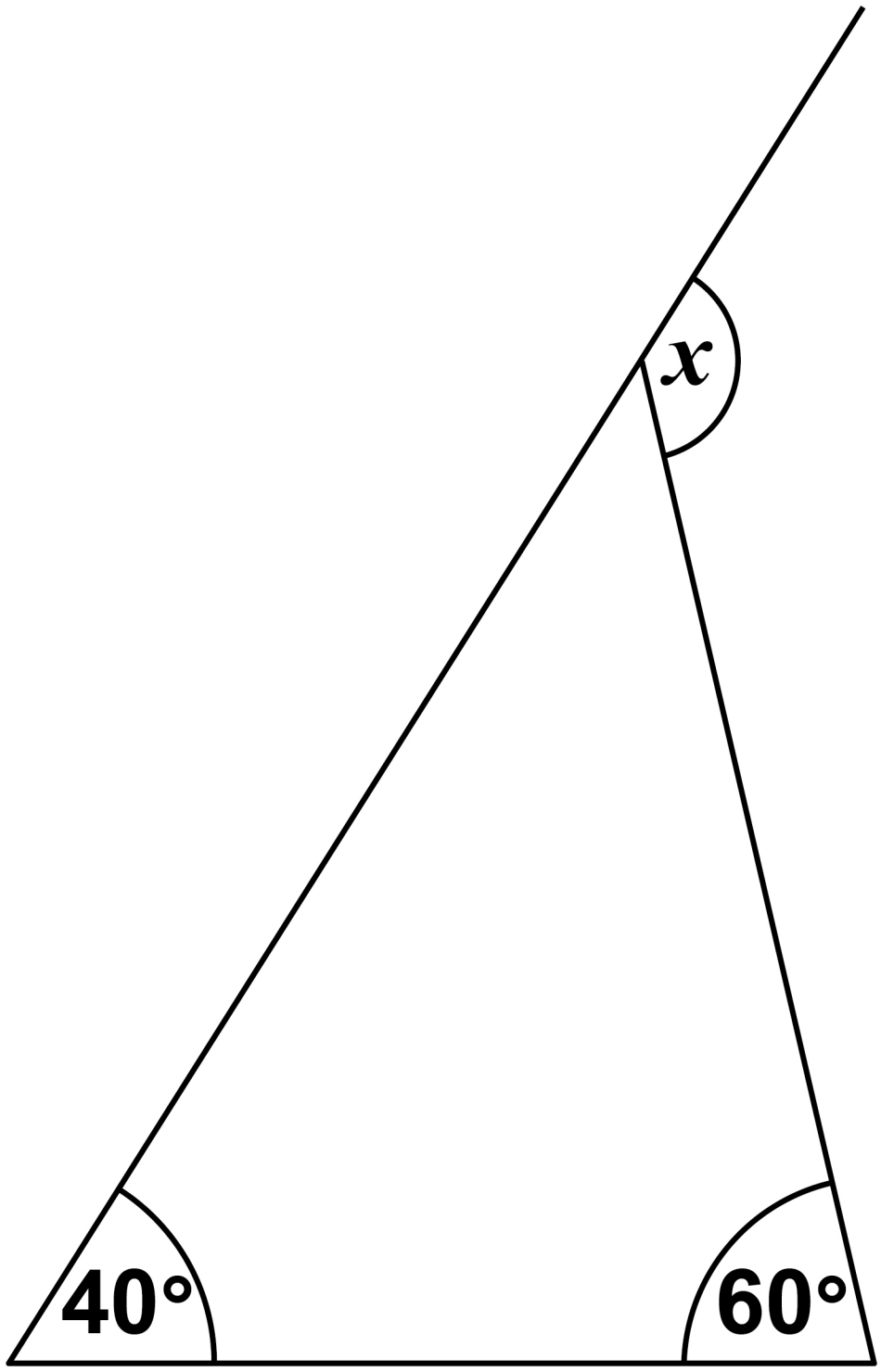
If the company uses only minibuses, how many will they need? [4 marks]

Answer

[Turn over]

9 **One side of a triangle is extended.**

The diagram is not drawn accurately.



Circle the size of angle x. [1 mark]

100° **80°** **60°** **40°**

10 Pavel uses his calculator to work out
352 × 7268

Circle the LAST digit in the answer.
[1 mark]

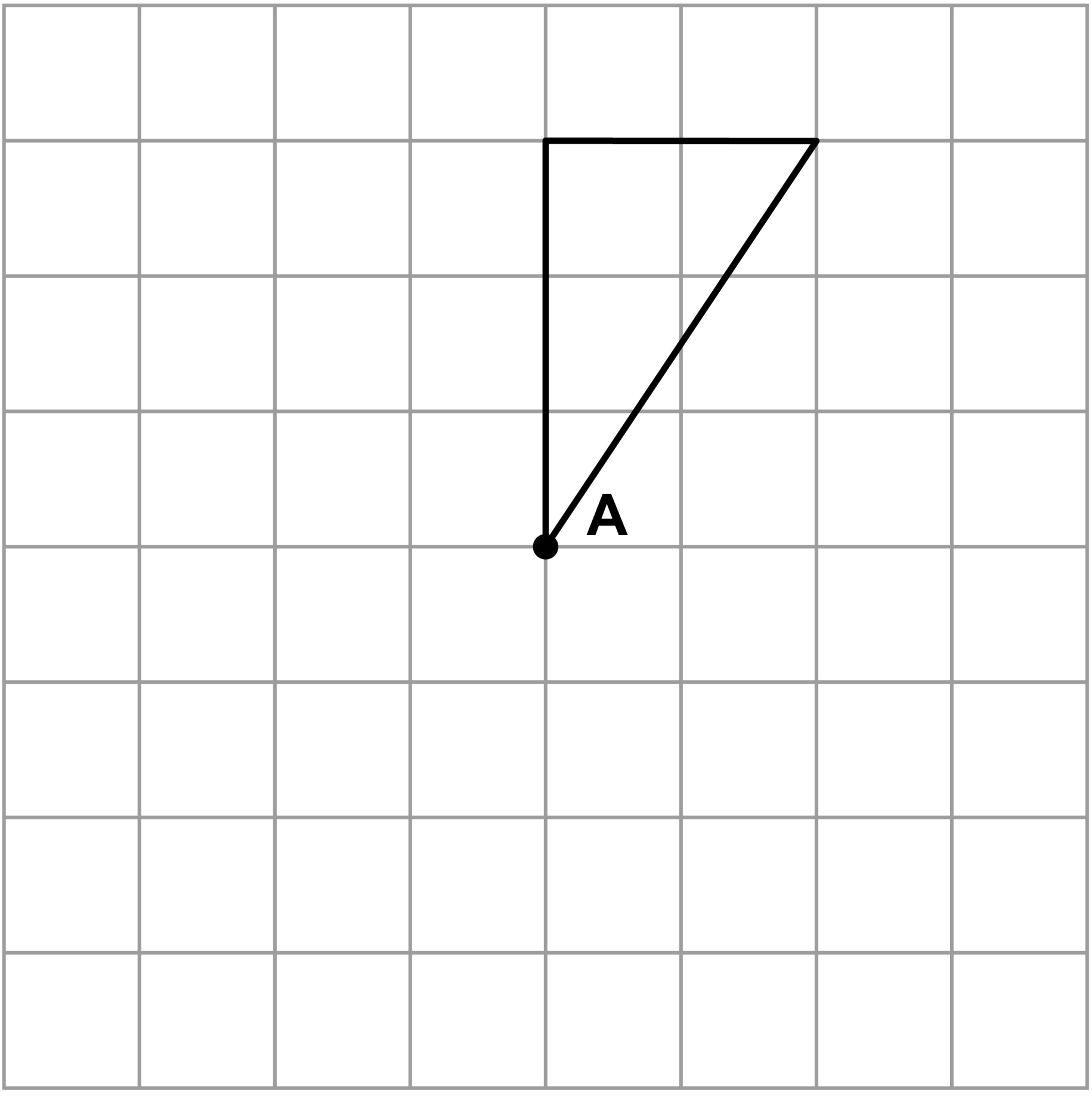
0 2 6 8

[Turn over]

6

11 Complete the diagram so that it has rotational symmetry of order 4 centre of rotation at point A.

[2 marks]



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[Turn over]

12 10% of 2100 is 210

Work out 43% of 2100 [3 marks]

Answer

[Turn over]

5

13 **Katy records the number of cars using a drive-through each hour for 24 hours.**

Here are the results.

36	20	37	53	42	41	24	18	39	35	40
47	38	17	23	18	13	35	10	7	6	18
31	57									

Katy makes the tally and frequency chart, on page 22, to put the data into groups.

BLANK PAGE

[Turn over]

Number of cars	Tally	Frequency
0 to 10		
10 to 20		
20 to 30		
30 to 40		
40 to 50		

Make TWO criticisms of Katy's tally and frequency chart.

You do NOT need to complete the chart. [2 marks]

Criticism 1 _____

_____

_____

Criticism 2 _____

_____

_____

[Turn over]

14 Counters in a bag are red, white or blue.

A counter is picked at random.

Complete the table. [2 marks]

	Red	White	Blue
Probability	0.15	0.4	

4

BLANK PAGE

[Turn over]

15 Here is a calculation.

$$31 \times 84 = 2604$$

You can use the calculation to help answer the following questions.

15(a) Work out $2604 \div 84$ [1 mark]

Answer _____

15(b) Work out 3.1×8.4 [1 mark]

Answer _____

15 (c) Work out 31×85 [2 marks]

Answer _____

16 A password has 30 characters.

It is made up of 5 numbers, 15 letters and some symbols.

Work out the ratio
numbers : letters : symbols

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

Answer _____ : _____ : _____

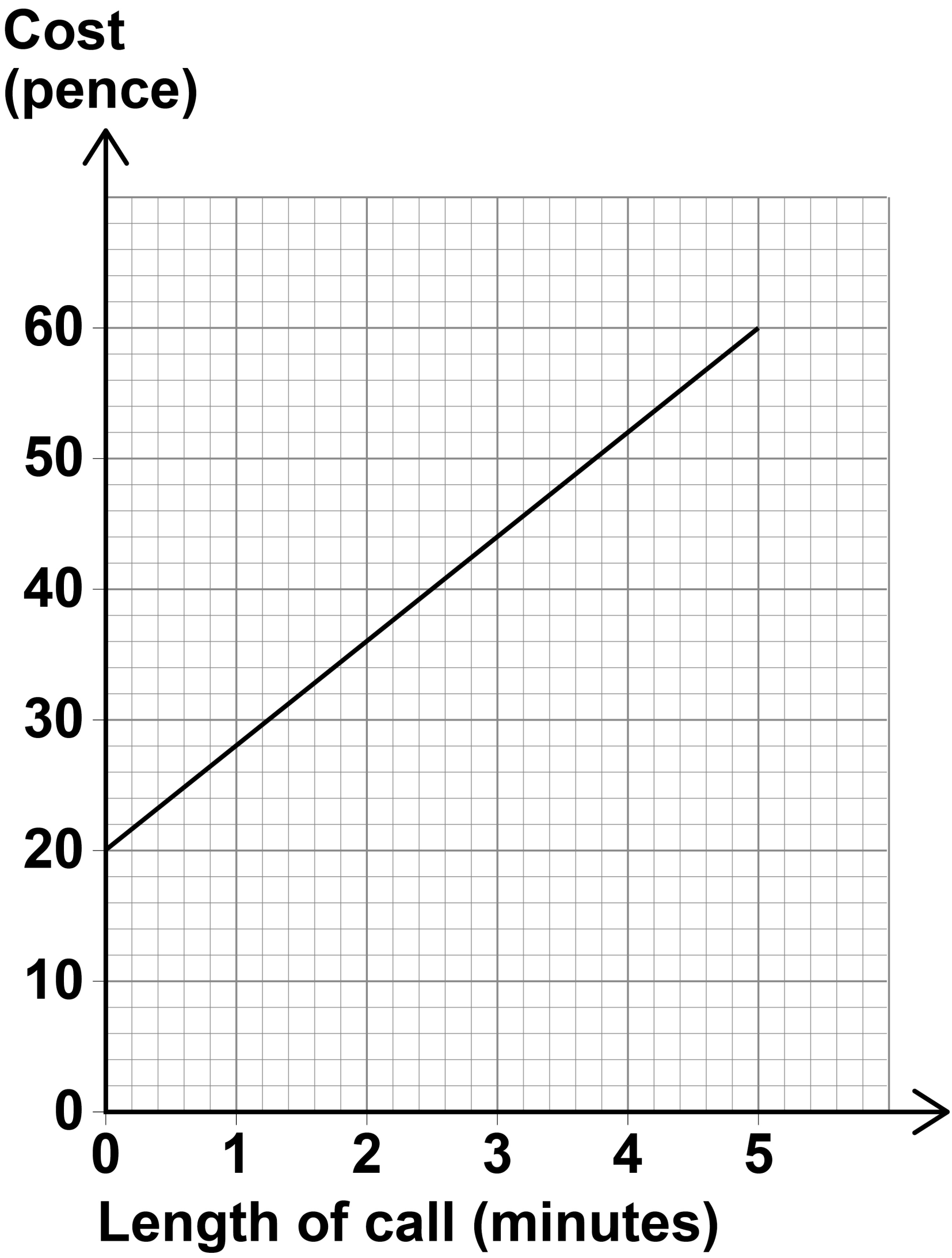
17 Work out $\frac{5}{6} + \frac{7}{12}$

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

Answer _____

18 The cost of making a phone call is
a fixed charge
and
a charge per minute.

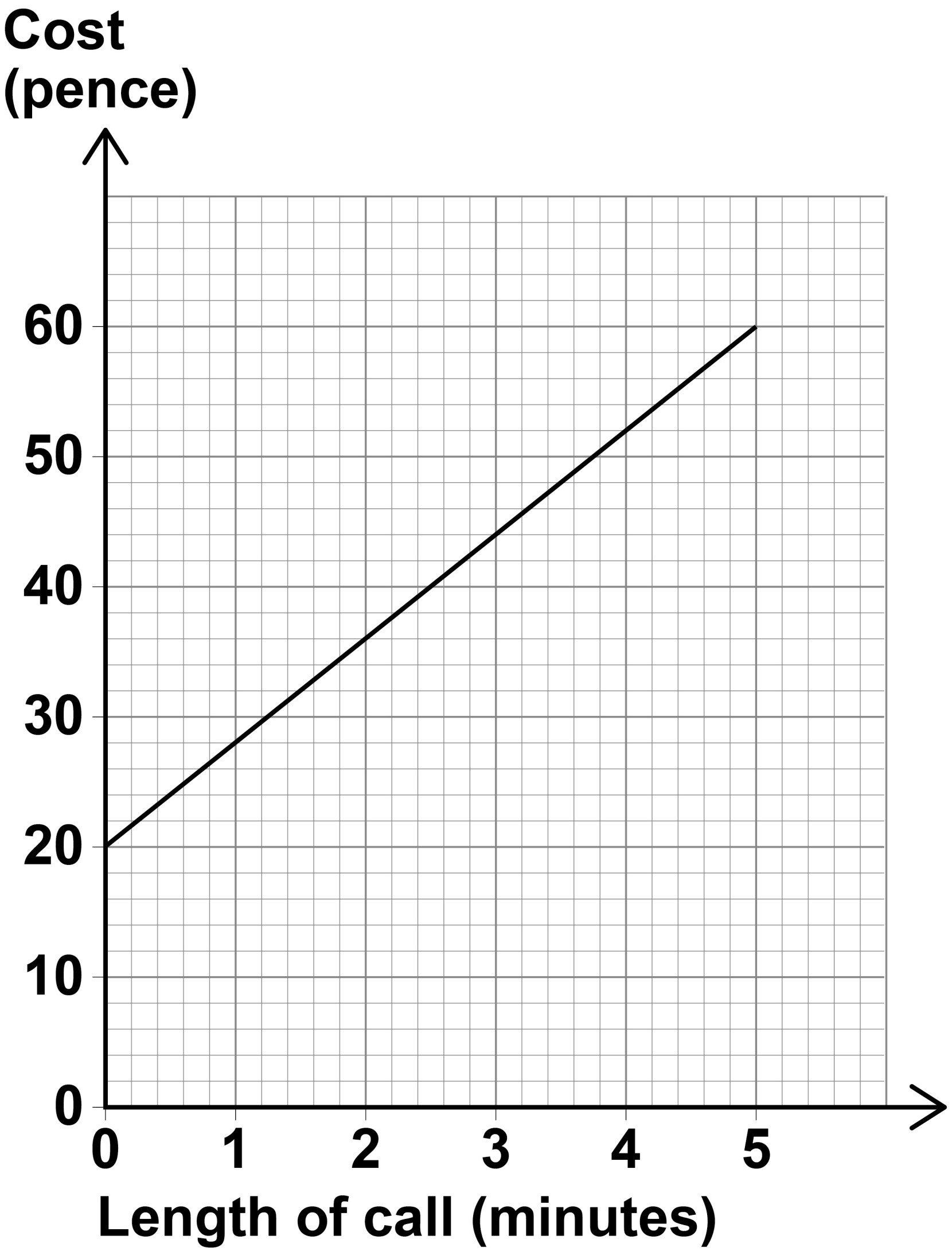
The costs of phone calls up to 5 minutes are represented by the graph, on the opposite page.



18(a) Write down the fixed charge. [1 mark]

Answer _____ pence

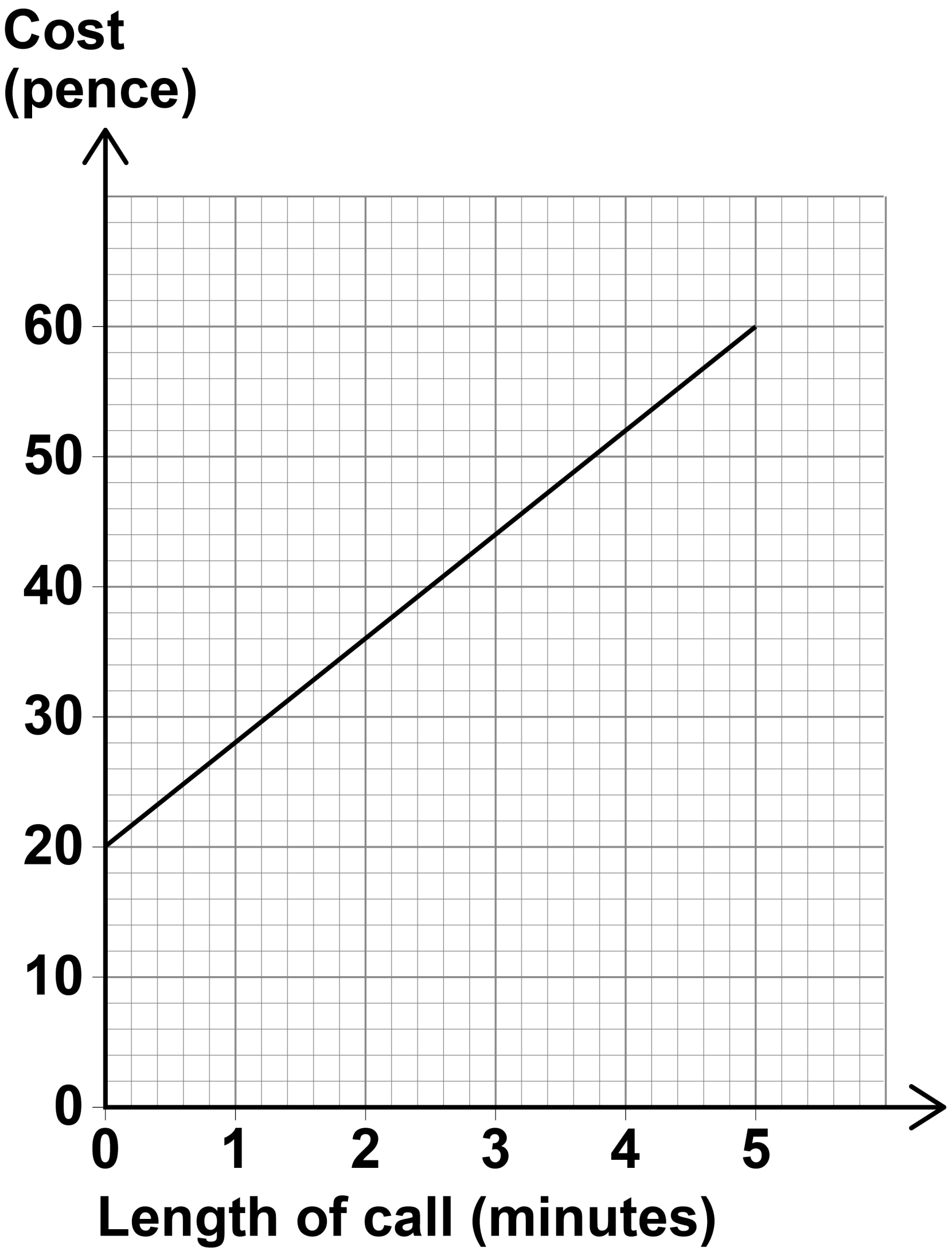
REPEAT OF GRAPH



18(b) Work out the charge per minute.
[2 marks]

Answer _____ pence

REPEAT OF GRAPH



18 (c) **Work out the cost of a phone call lasting 7 minutes. [2 marks]**

Answer _____ pence

5

19 A company sells bags of toffees and bags of mints.

Here are the numbers of sweets in 11 bags of toffees.

55 50 49 51 55 47 54
50 49 55 57

Here are the numbers of sweets in 10 bags of mints.

46 47 47 48 48 50 53
54 54 54

The company claims that the average number of sweets per bag is at least 50

Using medians, is the company's claim correct for each type of sweet?

You MUST work out the median for toffees and the median for mints.
[4 marks]

Toffees _____

_____

_____

Tick a box for toffees.

☐ **Yes**

☐ **No**

Mints _____

_____

_____

Tick a box for mints.

☐ **Yes**

☐ **No**

[Turn over]

20 Freddie tries to work out

$$\frac{29.15 + 83.47}{9.82}$$

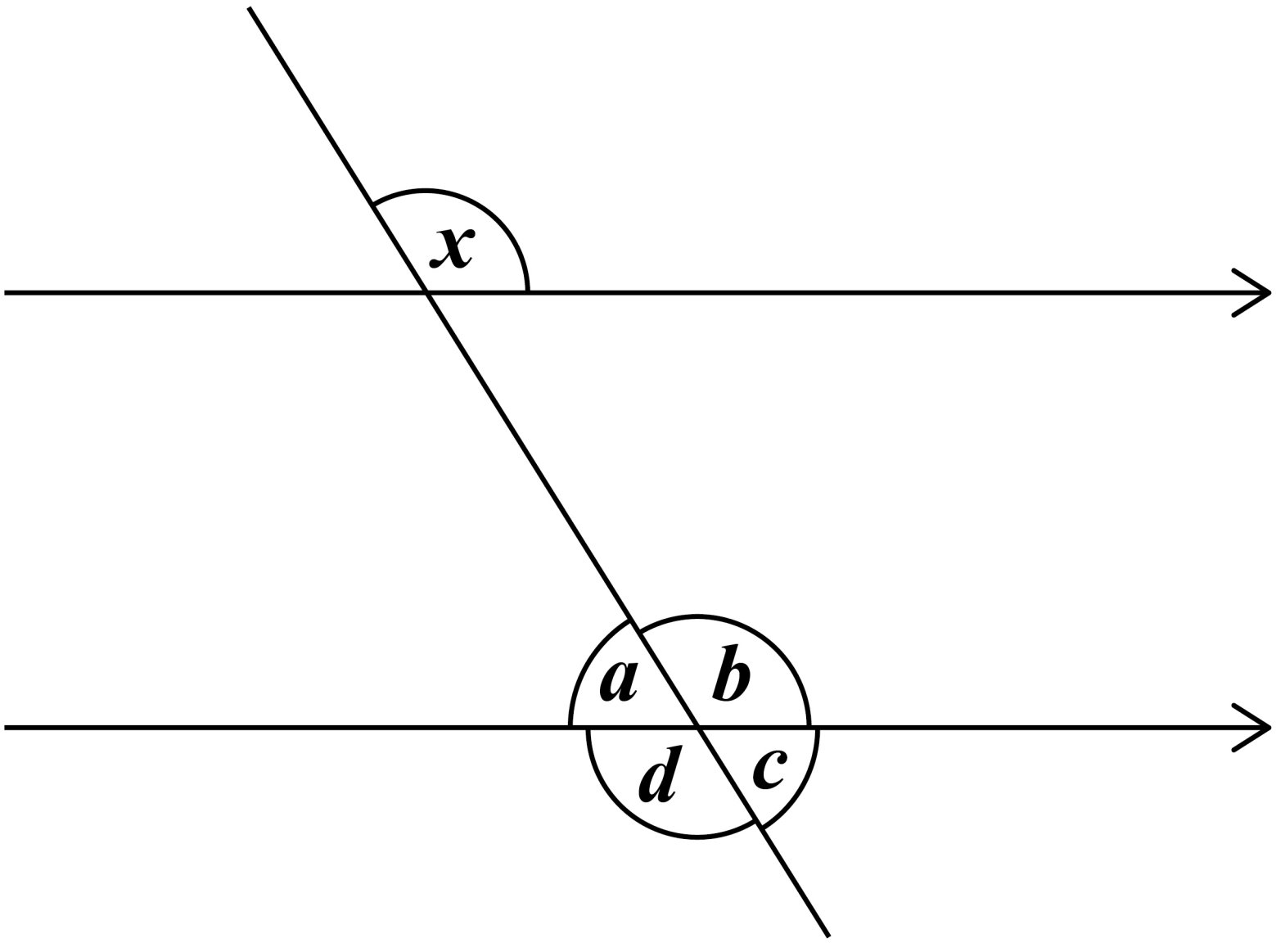
His answer is 37.65

By rounding each number to the nearest 10, show that his answer is incorrect. [3 marks]

[Turn over]

21 A straight line passes through two parallel lines.

The diagram is not drawn accurately.



Circle the angle that is CORRESPONDING to angle *x*. [1 mark]

a ***b*** ***c*** ***d***

8

22(a) **Lucy wants to simplify**
$6a - (7b - 2a)$

She writes $4a - 7b$

Is she correct?

Tick a box.

☐ **Yes**

☐ **No**

Give a reason for your answer.
[1 mark]

[Turn over]

22(b) **Lucy also wants to simplify**
$3p^2 \times 5p^7$

She says,

"Add 3 and 5, then add 2 and 7"

Her answer is $8p^9$

Tick a box for each part of her method. [1 mark]

	Correct	Not correct
Add 3 and 5	☐	☐
Add 2 and 7	☐	☐

22(c) Lucy thinks of a number.

10 × the number = 10 ÷ the number

Give a possible value of the number. [1 mark]

Answer _____

23 Lily's age is 2 years and 4 months.

Hugo's age is 1 year and 8 months.

Write Lily's age in months as a fraction of Hugo's age in months.

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

Answer

5

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[Turn over]

24 Working alone, it takes Kevin 4 hours to paint an area of 12 m^2

Kevin and Steve are going to paint an area of 24 m^2

Kevin says,

"Working together at the same rate it will take us 8 hours, because 24 is 2 × 12"

Is he correct?

Tick a box.

☐ **Yes**

☐ **No**

Give a reason for your answer.
[1 mark]

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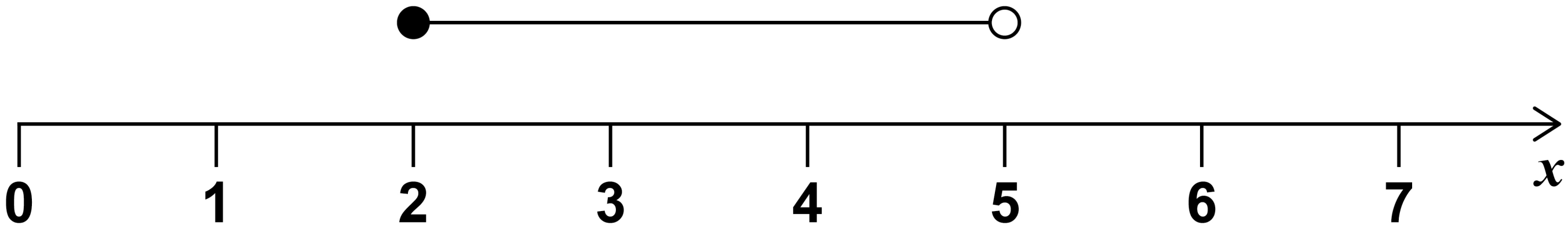
25(a) **Solve** $5x + 6 > 3x + 15$ **[3 marks]**

Answer

25(b) Write down the inequality represented by the number line. [2 marks]



Answer _____

6

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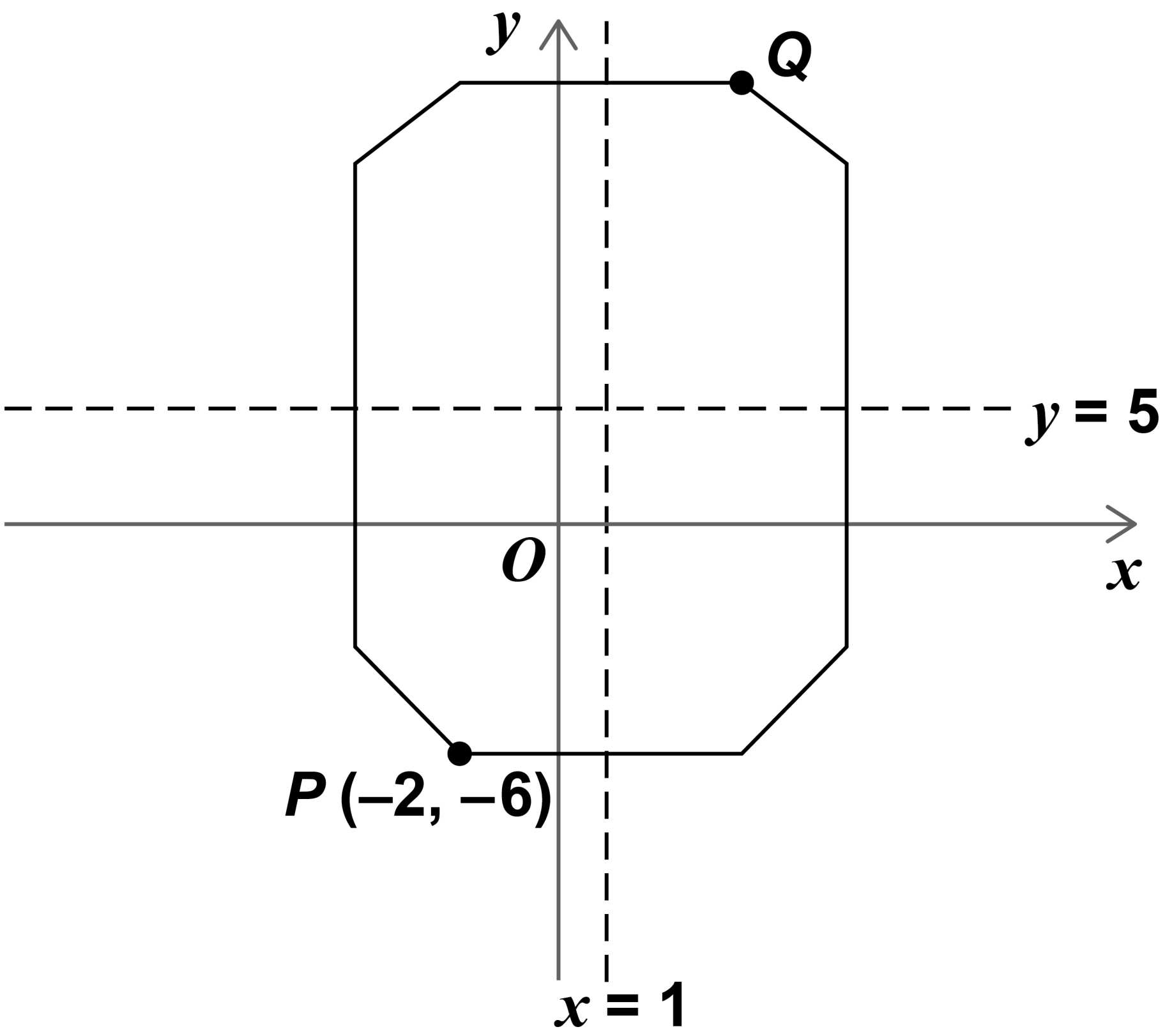
[Turn over]

26 The diagram shows an octagon.

The diagram is not drawn accurately.



$x = 1$ and $y = 5$ are lines of symmetry.

Work out the coordinates of point *Q*.
[2 marks]

Answer (_____, _____)

27(a) Work out $2000 \times 70\,000$

Give your answer in standard form.
[2 marks]

Answer _____

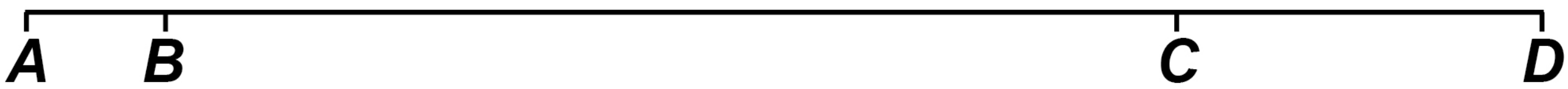
27(b) Work out $\frac{1.8 \times 10^2}{3 \times 10^{-1}}$

Give your answer as an ordinary number. [2 marks]

Answer _____

28 ***A*, *B*, *C* and *D* are junctions on a motorway.**

The diagram is not accurately.



distance *CD* = 3 × distance *AB*

distance *BC* = 25 miles

Salma drives from *A* to *C*.

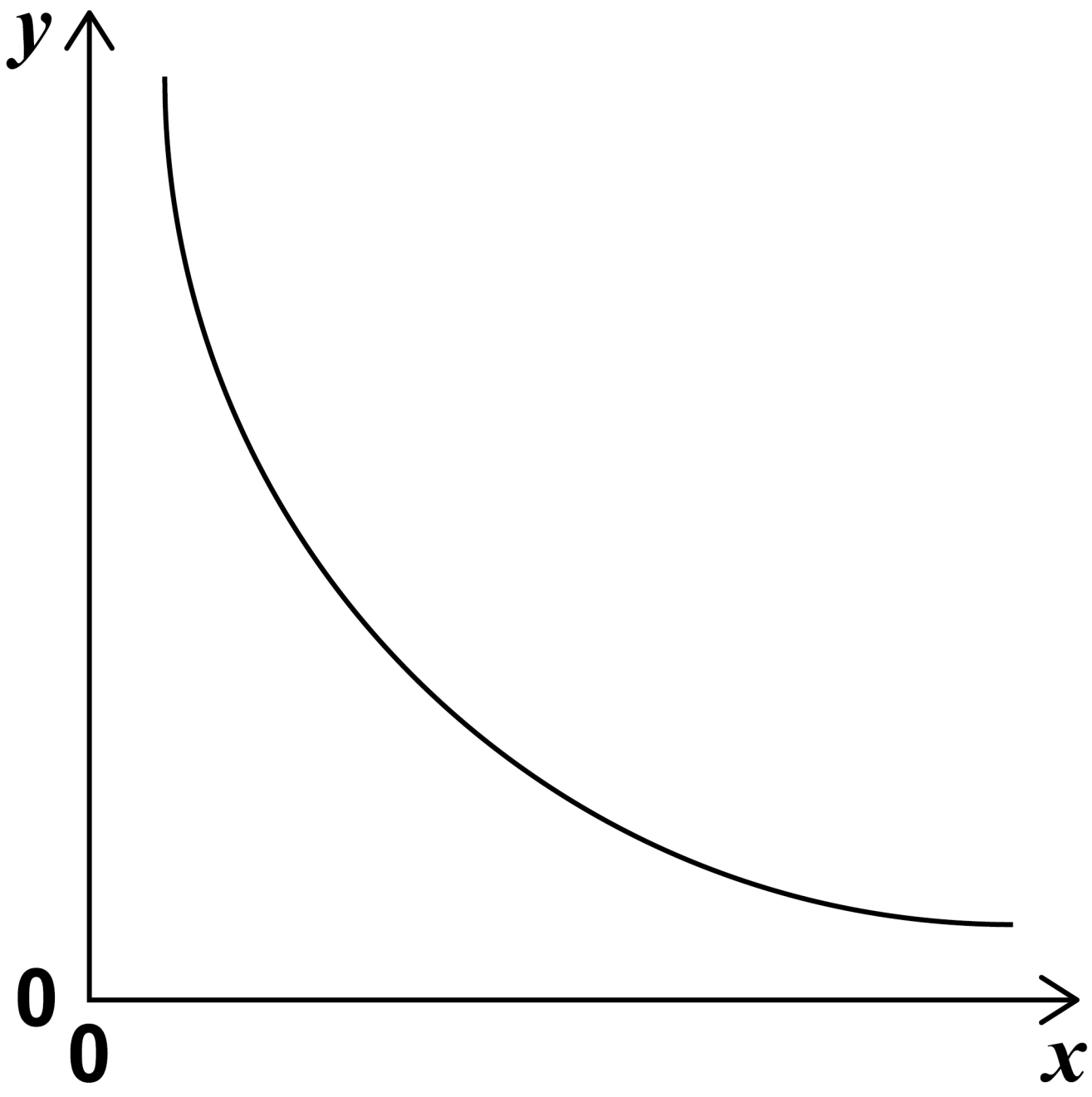
She drives for 30 minutes at an average speed of 62 miles per hour.

Work out the distance *AD*. [4 marks]

Answer _____ **miles**

[Turn over]

29 Here is a sketch of a graph.



Circle the equation of the graph.

k is a constant. [1 mark]

$y = kx$

$y = k + x$

$y = k - x$

$y = \frac{k}{x}$

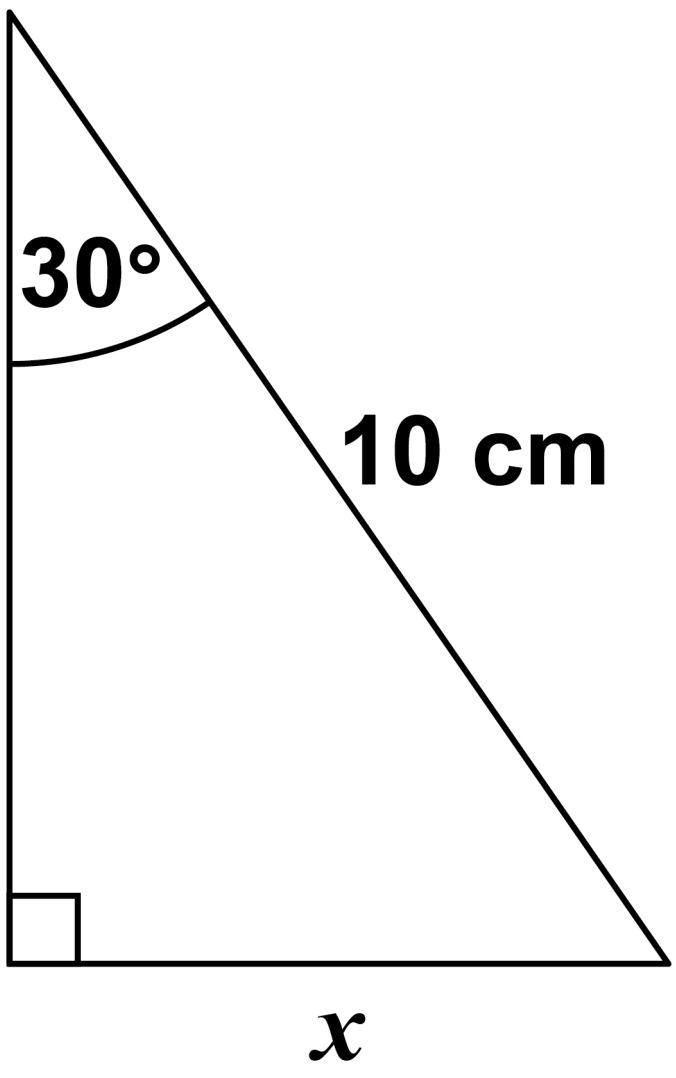
30 Write 200 as a product of prime factors.

Give your answer in index form.
[3 marks]

Answer _____

31 Here is a right-angled triangle.

The diagram is not drawn accurately.



Use trigonometry to work out the value of x. [3 marks]

Answer _____ cm

32 Factorise $x^2 + 7x + 10$ [2 marks]

Answer _____

END OF QUESTIONS

5

Additional page, if required.

Write the question numbers in the left-hand margin.

Additional page, if required.

Write the question numbers in the left-hand margin.

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For Examiner's Use	
Pages	Mark
4–5	
6–10	
12–15	
16–19	
20–22	
24–27	
28–31	
32–38	
39–42	
44–49	
50–53	
54–57	
58–59	
TOTAL	