Write your name here

Surname	Other names

Pearson
Edexcel GCSE

Centre Number | | | | | |

Candidate Number | | | | |

Methods in Mathematics

Unit 2: Methods 2

For Approved Pilot Centres ONLY

Foundation Tier

Thursday 19 June 2014 – Morning
Time: 1 hour 45 minutes

Paper Reference
5MM2F/01

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

Total Marks

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 be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is 100
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed.

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.

Turn over ▶

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5/5/6/C2/

P 4 3 4 0 3 A 0 1 2 8

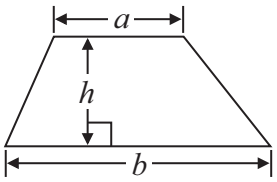
PEARSON

GCSE Mathematics 2MM01

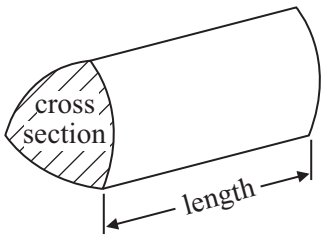
Formulae: Foundation Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Area of trapezium = $\frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 (a) Work out $6.3 + 2.1 + 5.7$

.....

(1)

(b) Work out -3×-2

.....

(1)

(c) Work out $24 \div -1.5$

.....

(1)

(d) Work out $9 \times (8.32 + 1.68)$

.....

(1)

(e) Work out $4 - 1.3^2$

.....

(1)

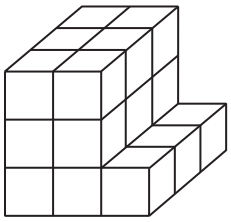
(f) Work out the difference between 16.8 and 22

.....

(1)

(Total for Question 1 is 6 marks)

2 Prism **A** is a solid prism made from centimetre cubes.



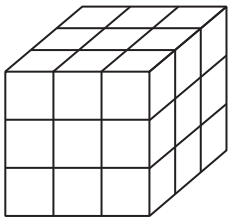
Prism **A**

Diagram **NOT** accurately drawn

(a) Find the volume of prism **A**.

..... cm^3

(2)



Prism **B**

Diagram **NOT** accurately drawn

Prism **B** is a solid cube made from centimetre cubes.
Prism **B** is made from more centimetre cubes than prism **A**.

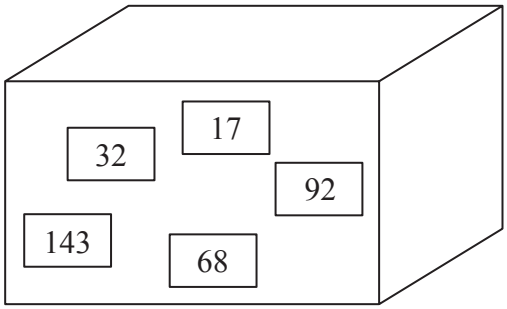
(b) How many more centimetre cubes?

.....

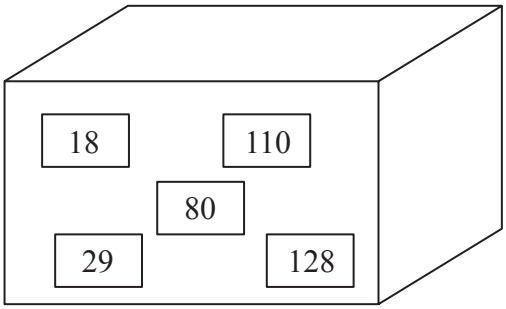
(1)

(Total for Question 2 is 3 marks)

3 There are five cards with numbers on them in Box **P**.
There are five cards with numbers on them in Box **Q**.



Box P



Box Q

Anne finds the total of the five numbers in each box.

Which box has the greater total?
You must show how you got your answer.

Box .....

(Total for Question 3 is 2 marks)

4 (a) Write 29% as a fraction.

.....

(1)

(b) Write 0.07 as a fraction.

.....

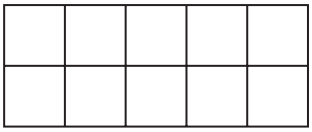
(1)

(c) Write 3% as a decimal.

.....

(1)

(d) Shade $\frac{2}{5}$ of this shape.

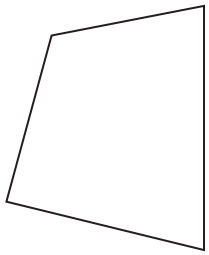


(1)

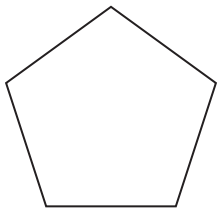
(Total for Question 4 is 4 marks)

5 Here are 5 polygons.

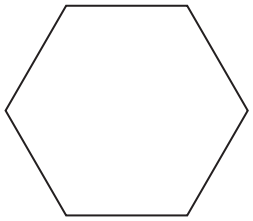
Polygon **A**



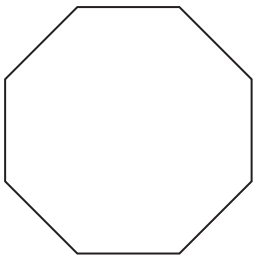
Polygon **B**



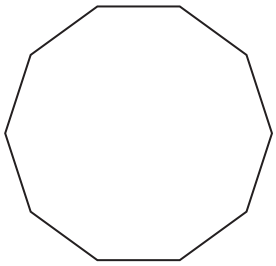
Polygon **C**



Polygon **D**



Polygon **E**



Match each of the polygons **A**, **B**, **C**, **D** and **E** to its mathematical name in the table.

Mathematical name	**Polygon**
pentagon	
decagon	
octagon	
quadrilateral	
hexagon	

(Total for Question 5 is 3 marks)

***6** Which is bigger $\frac{5}{8}$ or $\frac{2}{3}$?

You must show clearly how you got your answer.

(Total for Question 6 is 3 marks)

7 Joshua and Mary both think of the same number.

Joshua adds 14 to the number.
His answer is 39

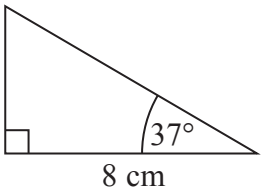
Mary subtracts 14 from the number.

What is her answer?

.....

(Total for Question 7 is 3 marks)

8 These two triangles are congruent.



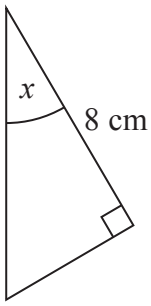


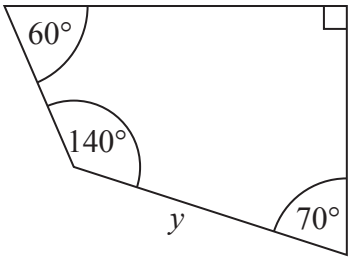
Diagram **NOT** accurately drawn

(a) Write down the size of the angle marked x.

.....°

(1)

These two quadrilaterals are congruent.



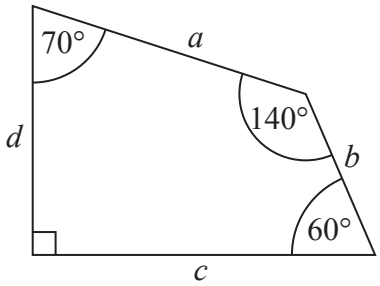


Diagram **NOT** accurately drawn

Side y is equal to one of the sides, a or b or c or d.

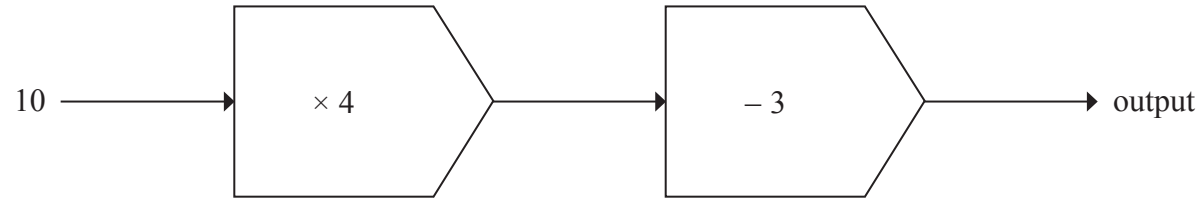
(b) Which side?

.....

(1)

(Total for Question 8 is 2 marks)

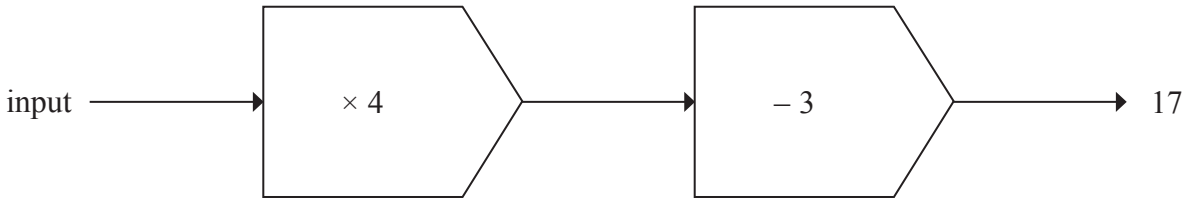
9 (a) Work out the output for this number machine.



.....

(1)

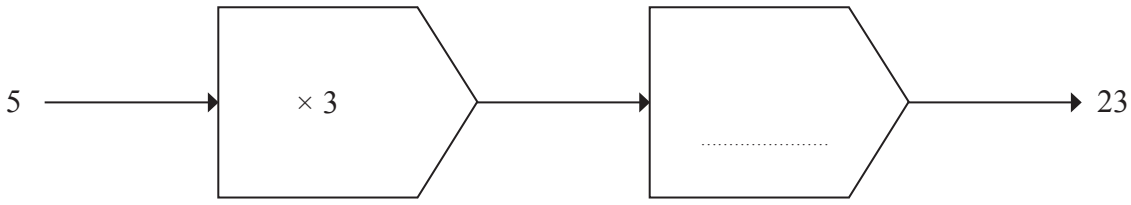
(b) Work out the input for this number machine.



.....

(2)

(c) Complete this number machine.



(1)

(Total for Question 9 is 4 marks)

10 (a) Work out the difference in temperature between −5 °C and −9 °C.

..... °C

(1)

(b) What temperature is 3 °C lower than 1 °C?

..... °C

(1)

−3 °C is halfway between temperature A and temperature B.

Temperature A is 2 °C.

(c) Work out temperature B.

..... °C

(2)

(Total for Question 10 is 4 marks)

11 (a) Write these decimals in order of size.
Start with the smallest decimal.

0.76 0.6 0.07 0.59 0.63

.....

(1)

(b) Write these numbers in order of size.
Start with the smallest number.

35% $\frac{3}{8}$ $\frac{2}{5}$ 25% $\frac{3}{10}$

.....

(2)

(Total for Question 11 is 3 marks)

12 $C = p - 37$

$p = 50$

(a) Work out the value of C.

.....

(1)

$D = r + 2q$

$r = 4.3$
$q = 6.2$

(b) Work out the value of D.

.....

(2)

$E = 4w - 3t$

$w = -5$
$t = -1$

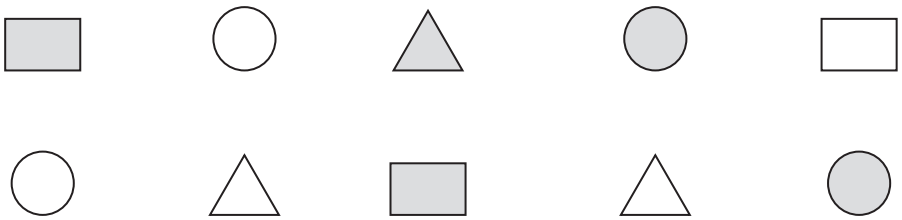
(c) Work out the value of E.

.....

(2)

(Total for Question 12 is 5 marks)

13 Here are some white shapes and some grey shapes.



(a) What percentage of the shapes are white shapes?

.....%

(1)

Ali takes some of the shapes.

$\frac{3}{7}$ of the shapes that are left are white shapes.

(b) How many white shapes and how many grey shapes did Ali take?

white shapes .....

grey shapes .....

(2)

(Total for Question 13 is 3 marks)

14 The diagram shows two cuboids, **A** and **B**.

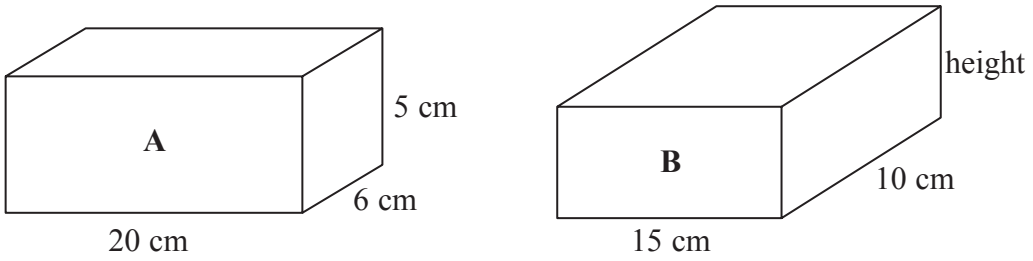


Diagram **NOT** accurately drawn

The two cuboids have the same volume.

Work out the height of cuboid **B**.

..... cm

(Total for Question 14 is 3 marks)

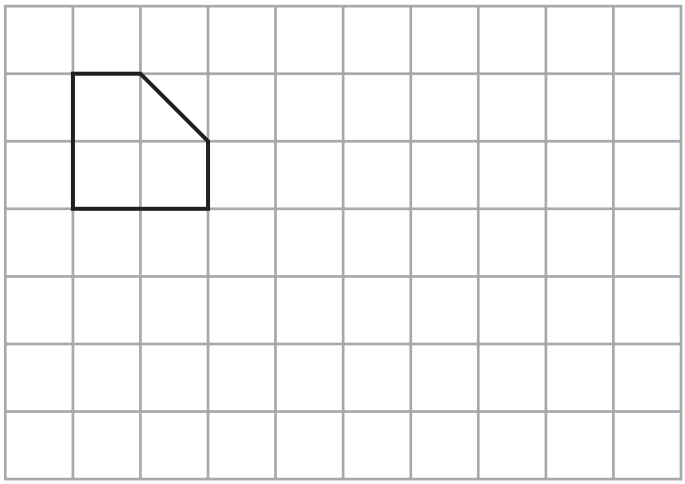
15 Here are four shapes.

One of these shapes does **not** tessellate.

(a) Draw a circle around this shape.

(1)

Here is a shape drawn on a grid.



(b) On the grid, show how this shape will tessellate.
You must draw at least 6 more shapes.

(2)

(Total for Question 15 is 3 marks)

16 Here is a rule for working out the volume of a pyramid.

> Multiply the base area by the height
>
> and then divide by 3

A pyramid has a base area of 9 cm^2 and a height of 4 cm.

(a) Use the rule to work out the volume of this pyramid.

..... cm^3

(2)

A different pyramid has a volume of 20 cm^3.
The base area of this pyramid is 10 cm^2.

(b) Work out the height of this pyramid.

..... cm

(3)

(Total for Question 16 is 5 marks)

***17**

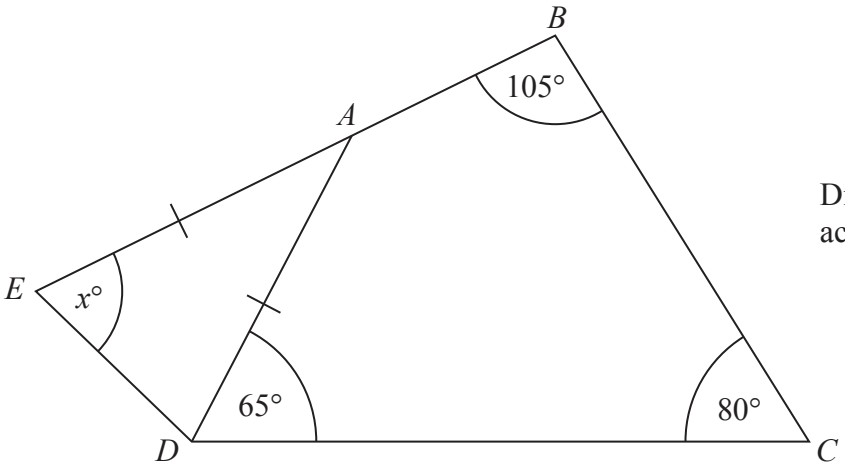


Diagram **NOT** accurately drawn

ABCD is a quadrilateral.
EAB is a straight line.
ADE is an isosceles triangle with $AD = AE$

Work out the value of x.
Give reasons for your answer.

(Total for Question 17 is 4 marks)

18 (a) Work out 18% of £614

£ .....

(2)

(b) Write 36 as a percentage of 48

..... %

(2)

(Total for Question 18 is 4 marks)

19 The diagram shows a quarter circle.

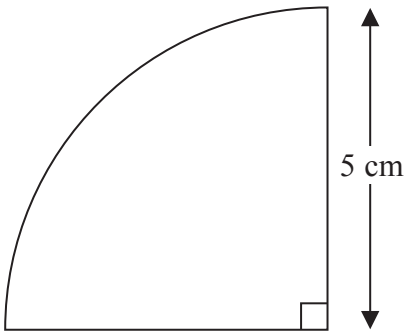


Diagram **NOT** accurately drawn

The radius of the quarter circle is 5 cm.

Work out the area of the quarter circle.
Give your answer correct to 3 significant figures.

.....

(Total for Question 19 is 4 marks)

20 Peter has x counters.

Lia has 7 more counters than Peter.
Soraya has 3 times as many counters as Peter.

The total number of counters is T.

Write a formula for T in terms of x.

.....

(Total for Question 20 is 3 marks)

21 The total weight of 55 identical items is 2.75 kg.

Work out the total weight of 22 of these identical items.

..... kg

(Total for Question 21 is 2 marks)

22 *ABCD* is a rectangle.

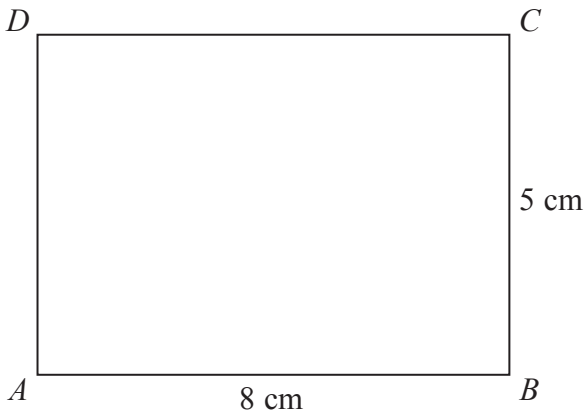


Diagram **NOT** accurately drawn

AB = 8 cm
BC = 5 cm

Work out the length of *AC*.
Give your answer correct to 3 significant figures.

..... cm

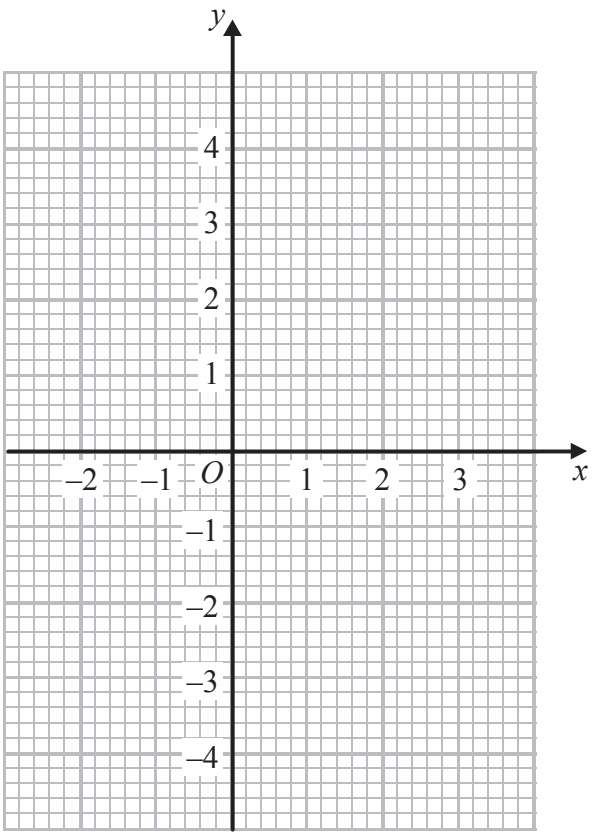
(Total for Question 22 is 3 marks)

23 (a) Complete the table of values for $y = x^2 - x - 3$

x	–2	–1	0	1	2	3
y		–1		–3	–1	

(2)

(b) Draw the graph of $y = x^2 - x - 3$ for values of x from –2 to 3



(2)

(c) Use your graph to find estimates for the solutions of $x^2 - x - 3 = 0$

.....

(2)

(Total for Question 23 is 6 marks)

24 Here is a 6-sided polygon.

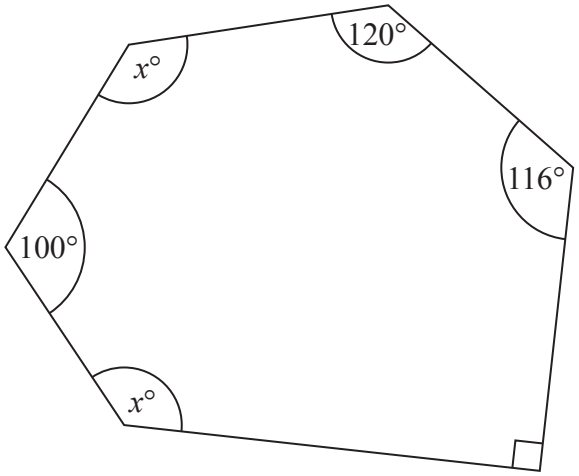


Diagram **NOT** accurately drawn

Work out the value of x.

.....

(Total for Question 24 is 4 marks)

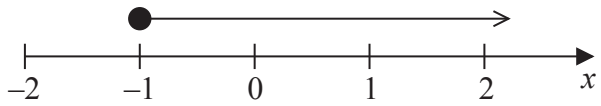
25 £360 is shared in the ratio 1 : 3 : 5

Work out the difference between the largest share and the smallest share.

£ .....

(Total for Question 25 is 3 marks)

26 Here is a number line.



(a) Write down the inequality shown on the number line.

.....

(1)

(b) Solve $5y - 2 < 18$

.....

(2)

(Total for Question 26 is 3 marks)

27 Beth has 600 counters.

$\frac{3}{5}$ of the counters are yellow.

25% of the counters are red.
The rest of the counters are green.

Beth is given some more red counters.
Now the ratio of the number of green counters to the number of red counters is 1 : 2

How many red counters was Beth given?

.....

(Total for Question 27 is 4 marks)

***28**

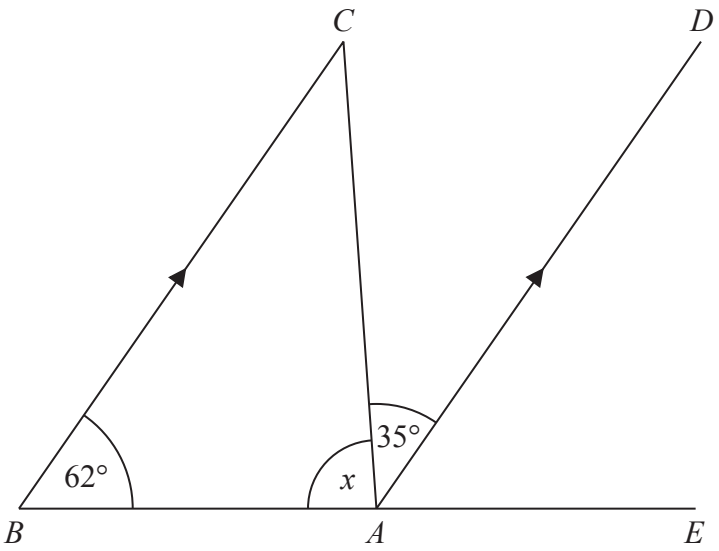


Diagram **NOT** accurately drawn

ABC is a triangle.
BC is parallel to *AD*.
BAE is a straight line.

Work out the size of the angle marked *x*.
You must give reasons for your answer.

(Total for Question 28 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

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