Half paper C14

Paper 3 style · Calculator · Foundation

36 marks
about 35–40 minutes

Name	Date	Score / 36

Answer ALL questions. Write your answers in the spaces provided. You must write down all the stages in your working. You may use a calculator. Diagrams are **NOT** accurately drawn unless it says so.

Help on the longer questions

Underlined words tell you what the question wants.

Remember reminds you of a fact you need.

1 **Change** 650 centimetres into metres.

..... metres

(1)

(Total for Question 1 is 1 mark)

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2 **Work out** $\frac{1}{6}$ of 42

.....

(1)

(Total for Question 2 is 1 mark)

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3 **Work out** 4.5^2

.....

(1)

(Total for Question 3 is 1 mark)

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4 Tom buys 180 tiles.
The tiles are sold in boxes.
There are 20 tiles in each box.
Each box of tiles costs £8.45
Work out the total cost of the boxes of tiles Tom buys.

Remember Write down each cost or amount as you work it out, then add them up. Write money with 2 decimal places (£4.50). 100p = £1.

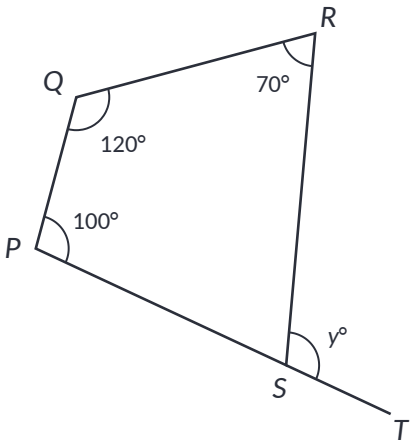
£ .....

(3)

(Total for Question 4 is 3 marks)

Turn over ►

5 *PQRS* is a quadrilateral.
PST is a straight line.



Find the value of *y*.

> **Remember** Straight line = 180°. Around a point = 360°. Triangle = 180°. Quadrilateral = 360°. Isosceles: two equal base angles. Write the reason for each angle.

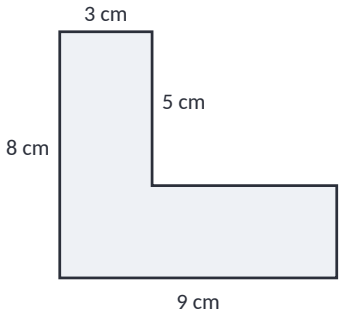
y = ...

(3)

(Total for Question 5 is 3 marks)

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6 Here is a shape. All the corners are right angles.



Work out the perimeter of this shape.

..... cm

(2)

(Total for Question 6 is 2 marks)

7

Remember Collect like terms: the same letter (and power) together. Watch the sign in front of each term.

(a) **Simplify** $4a + 6b - a - 2b$

.....

(2)

(b) **Solve** $4p - 5 = 23$

$p =$ .....

(2)

(Total for Question 7 is 4 marks)

8 Here are the costs of the same type of batteries in two shops.

Shop A	Shop B
Pack of 5 batteries	Pack of 8 batteries
£1.85	£2.80

Leo needs to buy at least 36 batteries.
He assumes that he has to buy batteries in whole packs.
Leo wants to buy the batteries as cheaply as possible from the same shop.

Remember Write down each cost or amount as you work it out, then add them up. Write money with 2 decimal places (£4.50). 100p = £1.

(a) Which shop should he buy the batteries from, shop **A** or shop **B**?
You must show all your working.

(4)

(b) Leo's assumption is wrong.
He can buy single batteries for 40p each in shop **A** and for 45p each in shop **B**.
Does this affect which of these two shops Leo should buy the batteries from?
Give a reason for your answer.

(1)

(Total for Question 8 is 5 marks)

9 There are only 6 green cards, 3 white cards and 5 black cards in a pack.
Mia is going to take at random one card from the pack.

> **Remember** Probabilities add up to 1. P(event) = number of ways it can happen ÷ total number of outcomes. AND means multiply.

(a) **Write down** the probability that Mia will take a green card.

.....

(2)

(b) Sam is going to throw a biased dice once.
The probability that the dice will land on four is 0.15
What is the probability that the dice will **not** land on four?

.....

(1)

(Total for Question 9 is 3 marks)

10 Here are the types of sandwiches sold in a café last week.

Sandwiches
Ham
Cheese
Tuna
Egg

63 ham sandwiches were sold.
This was 35% of the total number of sandwiches sold.

> **Remember** Fraction of an amount: ÷ by the bottom, × by the top. Percentage: 10% = ÷ 10, 1% = ÷ 100, or use a multiplier (35% = 0.35).

(a) **Work out** the total number of sandwiches sold.

.....

(2)

(b) Of the 63 ham sandwiches sold, 22 were sold on Monday.
Write 22 as a percentage of 63
Give your answer **correct to the nearest whole number**.

..... %

(2)

(Total for Question 10 is 4 marks)

11 Ava, Ben and Cara each have some money.
Ava has £75
Ben has £90
Cara has two £5 notes, one £20 note and some £10 notes.
The mean amount of money per person is £85
How many £10 notes does Cara have?

> **Remember** Mean = total ÷ how many. Median = middle value when in order. Mode = most common. Range = biggest − smallest.

.....

(4)

(Total for Question 11 is 4 marks)

12 Jo cycles a distance of 36 km at an average speed of 24 km/h.
She then runs a distance of 10 km at an average speed of 8 km/h.
Work out the total time Jo takes.
Give your answer in hours and minutes.

…… hours …… minutes

> **Remember** Speed = distance ÷ time. Distance = speed × time. Time = distance ÷ speed. Change minutes to hours: ÷ 60 (30 min = 0.5 h).

(3)

(Total for Question 12 is 3 marks)

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13 A number, m, is rounded **to 1 decimal place**.
The result is 6.3
Complete the error interval for m.

…… ≤ m < ……

(2)

(Total for Question 13 is 2 marks)

TOTAL FOR PAPER IS 36 MARKS

C14 mark scheme

Q		Answer	Mark	Notes
1		6.5	B1	
2		7	B1	
3		20.25	B1	
4		76.05	M1 M1 A1	M1 for 180 ÷ 20 (= 9) M1 for 9 × 8.45 A1 cao
5		110	M1 M1 A1	M1 for 360 − (100 + 120 + 70) (= 70) M1 for 180 − 70 A1 cao
6		34	M1 A1	M1 for finding a missing side (6 or 3) A1 cao
7	(a)	$3a + 4b$	B2	B2 (B1 for $3a$ or $4b$)
	(b)	7	M1 A1	M1 for $4p = 28$ A1 cao
8	(a)	Shop B (A £14.80, B £14.00)	M1 M1 M1 C1	M1 for 8 packs from A or 5 packs from B M1 for 8 × 1.85 (= 14.80) M1 for 5 × 2.80 (= 14.00) C1 Shop B with both costs
	(b)	No: the cheapest in A is now £13.35 (7 packs + 1 single), in B £13.00 (4 packs + 4 singles), so B is still cheaper	C1	C1
9	(a)	$\frac{6}{14} = \frac{3}{7}$	B2	B2 (B1 for $6/a$ with $a > 6$ or $b/14$)
	(b)	0.85	B1	
10	(a)	180	M1 A1	M1 for 63 ÷ 0.35 A1 cao
	(b)	35	M1 A1	M1 for 22 ÷ 63 × 100 (= 34.9…) A1 cao

Mark scheme continues ►

Q	Answer	Mark	Notes
11	6	M1 M1 M1 A1	M1 for 3 × 85 (= 255) M1 for 255 − 75 − 90 (= 90) M1 for (90 − 30) ÷ 10 A1 cao
12	2 hours 45 minutes	M1 M1 A1	M1 for 36 ÷ 24 (= 1.5) or 10 ÷ 8 (= 1.25) M1 for 1.5 + 1.25 (= 2.75) A1 cao
13	$6.25 \leq m < 6.35$	B1 B1	B1 for each

B1 = mark for a correct answer · **M1** = method mark · **A1** = accurate answer after M1 · **C1** = reason · **cao** = correct answer only

Score ____ / 36