12 Cornflakes are sold in two sizes of box.

Size of box	Weight of cornflakes
small	450 g
large	750 g

Rae buys 3 small boxes of cornflakes and some large boxes of cornflakes.
In total she buys 5850 g of cornflakes.

Work out the number of large boxes of cornflakes Rae buys.

....

(Total for Question 12 is 3 marks)

13 The stem and leaf diagram below gives information about the ages of people in a social club.

3	1	4	5			
4	0	2	2	5	6	
5	0	1	7	7	8	9
6	3	4	5	9		
7	0	4				

Key: 4|2 represents 42 years

Find the range of these ages.

.... years

(Total for Question 13 is 2 marks)

14 Here is a rectangle.

3 cm

7 cm
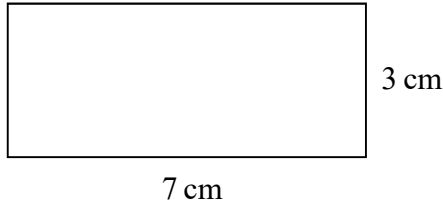
Coby has to find the perimeter of this rectangle.

He writes,
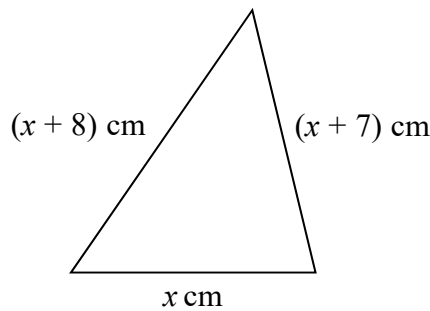
Perimeter = 7×3

(a) What mistake has Coby made?

....

....

....

(1)

Here is a triangle.

$(x + 8)$ cm $(x + 7)$ cm

x cm

Iram solves a problem about this triangle to find the value of x.

Her answer is

$x = -2$

(b) Explain why Iram's answer must be wrong.

....

....

....

(1)

(Total for Question 14 is 2 marks)

15 There are 800 students at a school.
Each student has either a school dinner or a packed lunch.

31% of the students have packed lunches.

55% of the students are boys.
60% of the boys have school dinners.

How many girls have packed lunches?
You must show all your working.

....

(Total for Question 15 is 4 marks)

16 In a bag there are only red counters, blue counters, green counters and yellow counters.
A counter is taken at random from the bag.

The table shows the probabilities of getting a red counter or a yellow counter.

Colour	red	blue	green	yellow
Probability	0.4	....	....	0.25

the number of blue counters : the number of green counters = 3 : 4
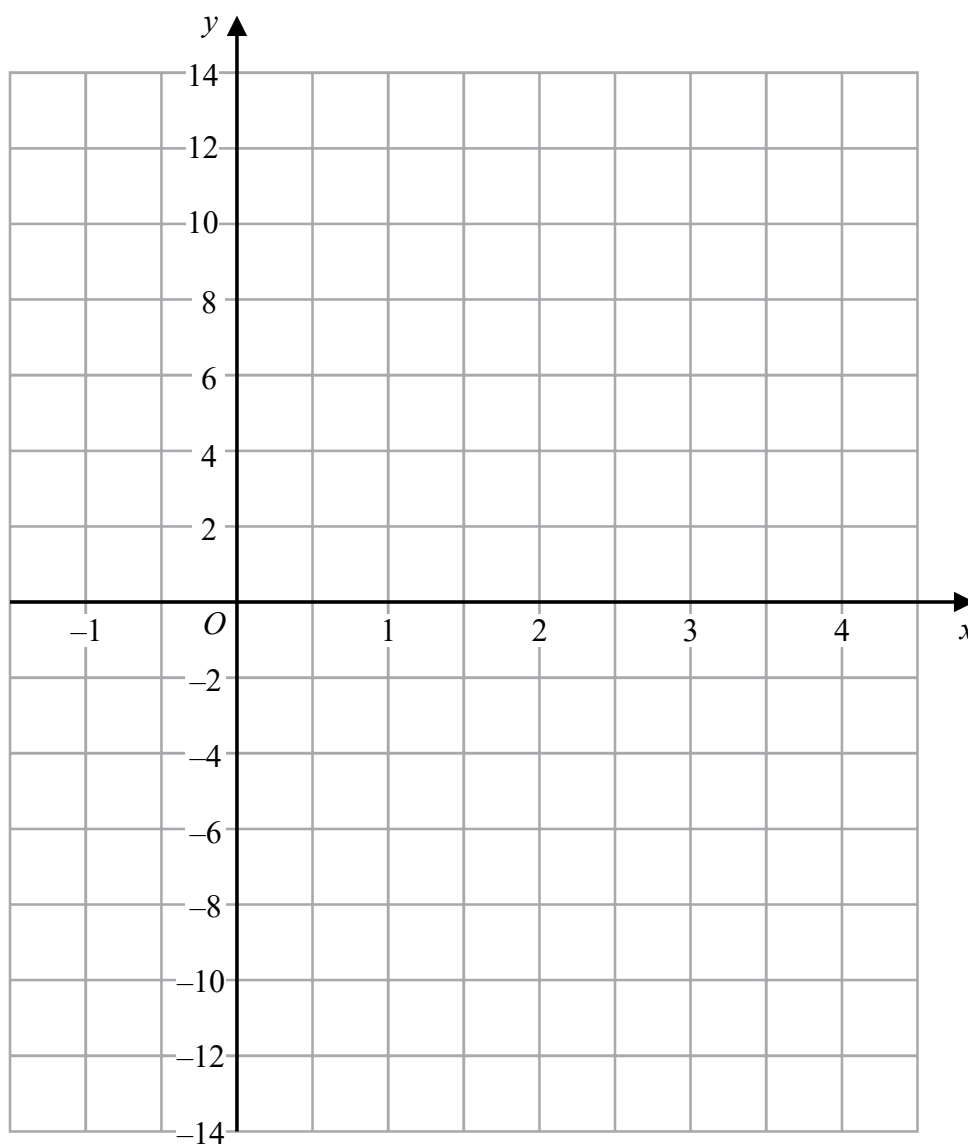
Complete the table.

(Total for Question 16 is 4 marks)

17 (a) Complete the table of values for $y = 4x - 6$

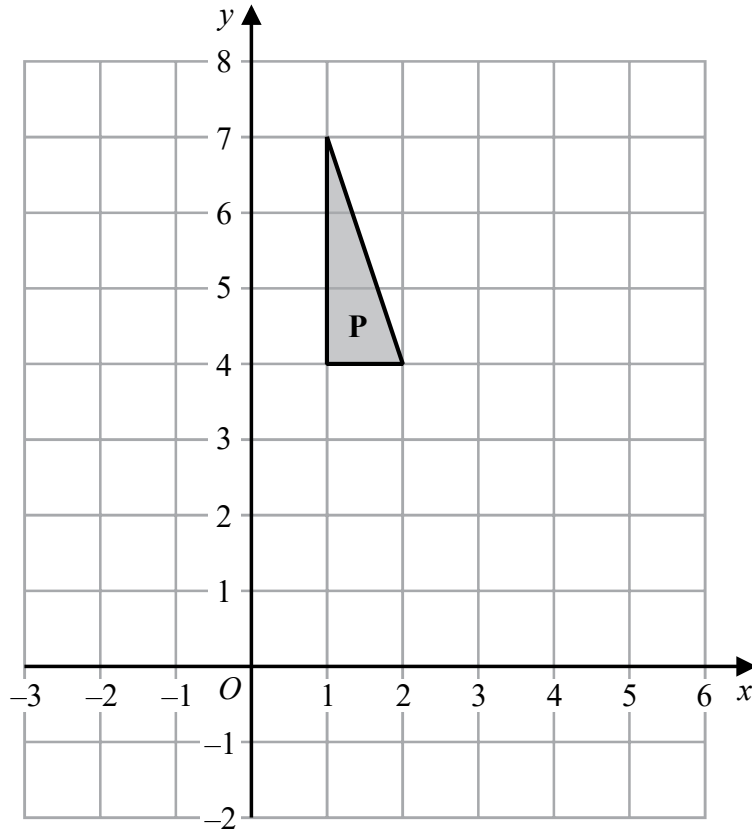| x	-1	0	1	2	3	4
y			-2			10

(2)

(b) On the grid, draw the graph of $y = 4x - 6$ for values of x from -1 to 4

(2)

(Total for Question 17 is 4 marks)

18

Reflect shape **P** in the line $y = 3$

(Total for Question 18 is 2 marks)

19 Solve $4(x - 6) = 44$

$x =$ ....
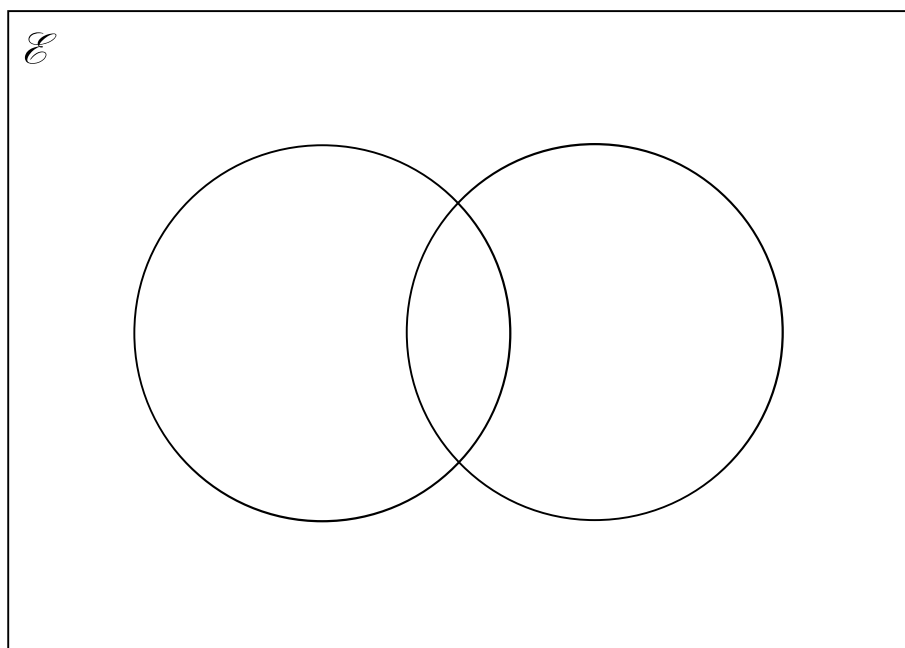
(Total for Question 19 is 2 marks)

20 $\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13\}$
$A = \{\text{multiples of } 3\}$
$B = \{\text{even numbers}\}$

Complete the Venn diagram for this information.

(Total for Question 20 is 4 marks)

21 Franco buys a house for £146 500
He sells the house for £158 220

Calculate the percentage profit Franco makes.

.... %

(Total for Question 21 is 3 marks)

Turn over ▶

P 5 8 8 7 5 A 0 1 5 2 4

22 (a) Expand and simplify $(x + 5)(x - 9)$

....

(b) Factorise fully $9x^2 + 6x$

....

(Total for Question 22 is 4 marks)

23 (a) Use your calculator to work out $\dfrac{29^2 - 4.6}{\sqrt{35 - 1.9^3}}$

Write down all the figures on your calculator display.

....

(b) Write your answer to part (a) correct to 4 significant figures.

....
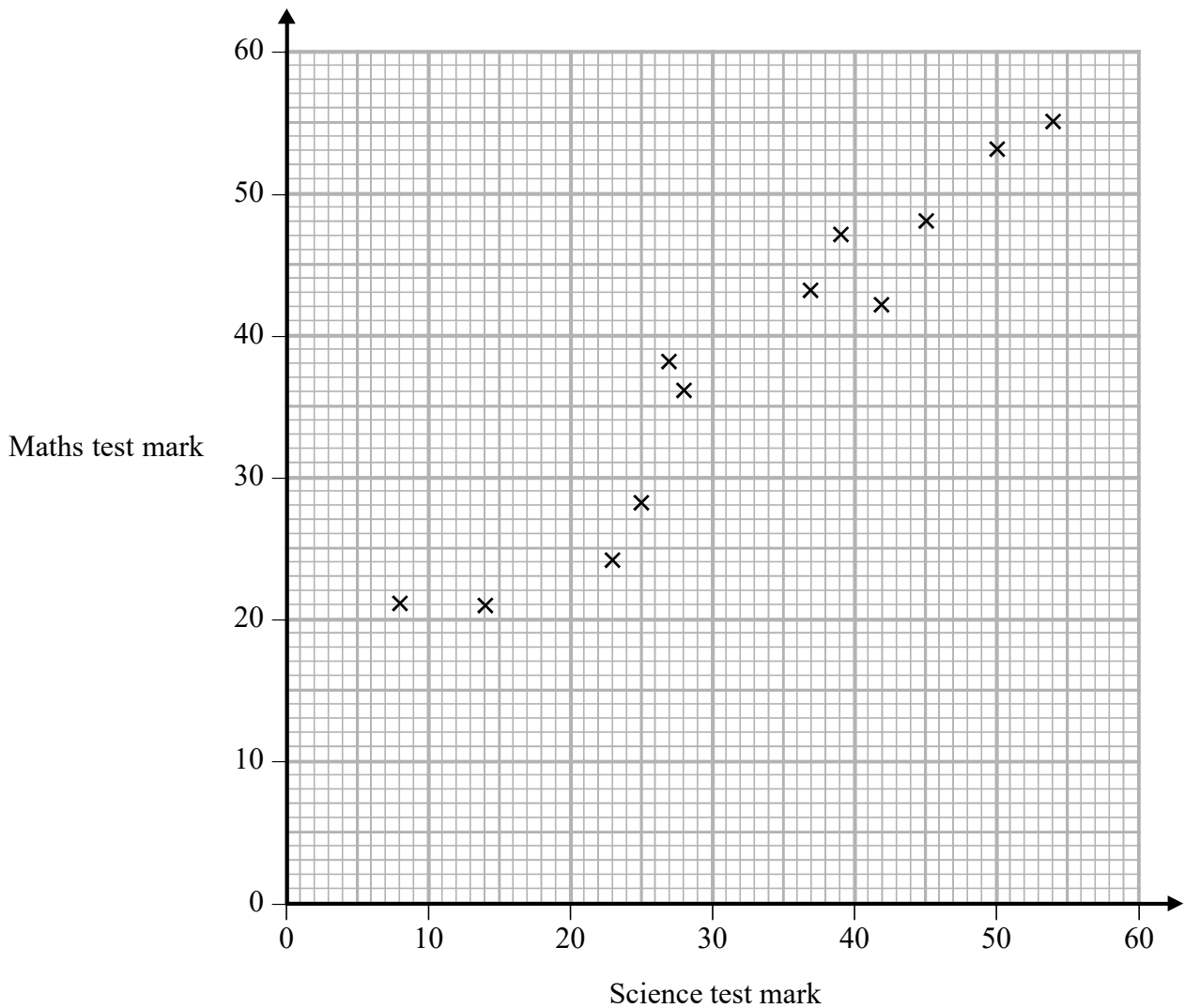
(Total for Question 23 is 3 marks)

24 The scatter graph shows information about the marks a group of students got in a Science test and in a Maths test.

Jamie got a mark of 34 in the Science test.

Using the scatter graph, find an estimate for Jamie's mark in the Maths test.

....

(Total for Question 24 is 2 marks)

Turn over ▶

25 The table gives information about the times taken, in seconds, by 18 students to run a race.

Time (t seconds)	Frequency
$5 < t \leqslant 10$	1
$10 < t \leqslant 15$	2
$15 < t \leqslant 20$	7
$20 < t \leqslant 25$	8

Work out an estimate for the mean time.
Give your answer correct to 3 significant figures.

.... seconds

(Total for Question 25 is 3 marks)

26 Write $37\,cm^3$ in mm^3

.... mm^3

(Total for Question 26 is 1 mark)

27 Nimer was driving to a hotel.
He looked at his Sat Nav at 13 30

Time	13 30
Distance to destination	65 miles

Nimer arrived at the hotel at 14 48

Work out the average speed of the car from 13 30 to 14 48
You must show all your working.

.... mph

(Total for Question 27 is 4 marks)

28 (a) Write 32 460 000 in standard form.

....

(1)

(b) Write 4.96×10^{-3} as an ordinary number.

....

(1)

Asma was asked to compare the following two numbers.

$$A = 6.212 \times 10^8 \quad \text{and} \quad B = 4.73 \times 10^9$$

She says,

"6.212 is bigger than 4.73 so A is bigger than B."

(c) Is Asma correct?
You must give a reason for your answer.

....

....

....

(1)

(Total for Question 28 is 3 marks)

29 The diagram shows a regular pentagon and a parallelogram.

117°

x
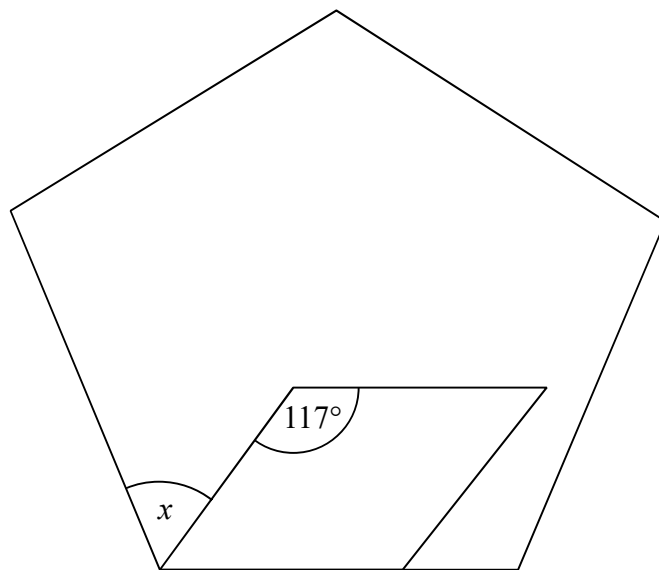
Work out the size of the angle marked x.
You must show all your working.

.... °

(Total for Question 29 is 4 marks)

P 5 8 8 7 5 A 0 2 1 2 4

30 **A** is in the shape of a quarter circle of radius 15 cm.
B is in the shape of a circle.

A

15 cm

B
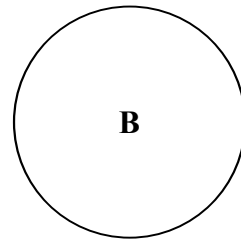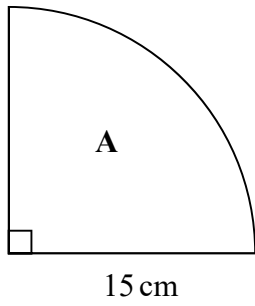
The area of **A** is 9 times the area of **B**.

Show that the radius of **B** is 2.5 cm.

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