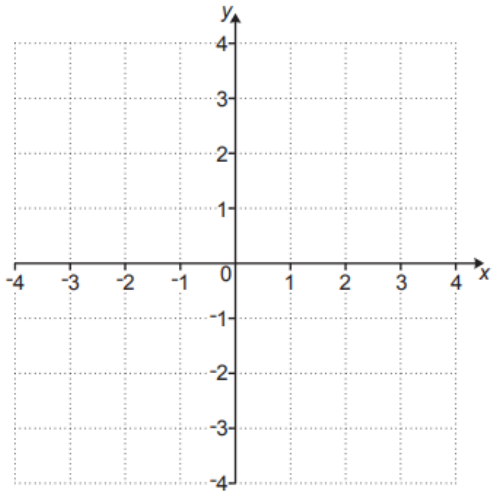
OCR GCSE Mathematics Calculator 2023 Foundation Paper 3 Revision Worksheet

Question 5

This is a one-centimetre square grid.



(a) On the grid, plot point A at (-3, 3).

(b) The line AB joins point A to point B. Point B is at (2, 3). Find the length of the line AB.

(c) On the grid, draw the line x = 2.

(d) ABCD is a square that fits on the grid. Point C is on the line x = 2. Find the coordinates of point D.

Question 6

(a) Simplify.

(i) $3a \times 4$

(ii) b x b x b x b

(iii) $c^2 \times c^4$

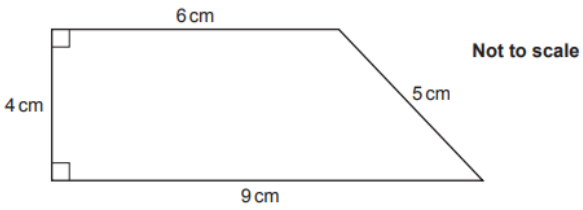
(b) Factorise $9 - 6y$

Question 7

A student takes two tests. In Test 1, the student scores 45 out of 60. Test 2 is also out of 60. Work out how many marks the student needs in Test 2 to have a mean of 70% in the two tests.

Question 8

(a) Work out the area of this trapezium.



(a) Work out the area of this trapezium:

(b) The circumference of a circle, in terms of r, is 100π cm. Work out the radius of the circle.

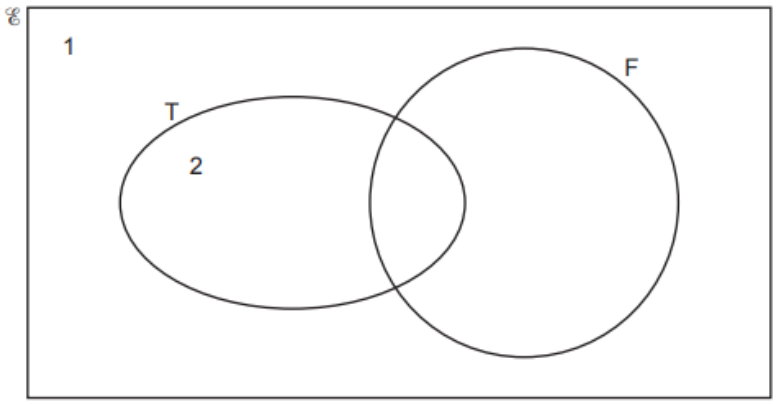
Question 9

$\xi = \{1,2,3,4,5,6,7,8,9,10,11,12,13\}$

$T = \{2,4,6,8,10,12\}$

$F = \{5,10\}$

(a) The elements 1 and 2 have been entered on this Venn diagram. Complete the Venn diagram to show all of the elements.



(b) Finley picks one of the 13 elements in the universal set at random. Write down the probability that the element is a member of both set T and set F.

(c) Sam picks one of the 13 elements in the universal set at random. Sam says:

The probability the element is in set T is $\frac{6}{13}$. The probability the element is in set F is $\frac{2}{13}$.
Therefore, the probability the element is in set T or set F is $\frac{6}{13} + \frac{2}{13} = \frac{8}{13}$.

Sam is wrong. Explain Sam's error and give the correct answer.

Question 10

(a) Write 18 : 42 as a ratio in its simplest form.

(b) In a bag of sweets $\frac{1}{5}$ of the sweets are green. The rest of the sweets are red.

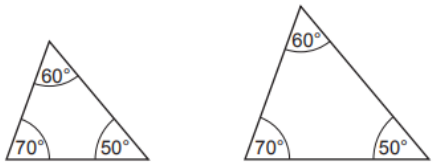
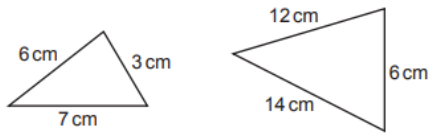
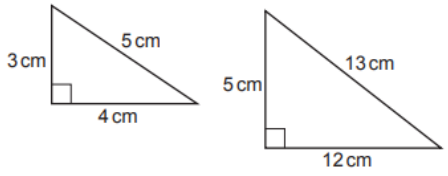
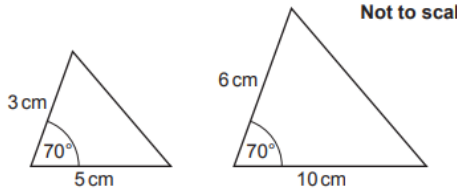
The ratio of the number of green sweets to the number of red sweets can be written in the form 1 : n.
Find the value of n.

(c) A factory has a large order for copper pipe. The factory has many machines that make the copper pipe. Each machine makes the same length of copper pipe in a day. 3 machines can make the copper pipe for this order in 25 days. Find the number of machines needed to make this order in 15 days.

Question 11

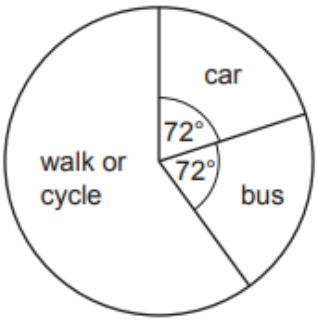
The table shows four pairs of triangles. For each pair, decide whether the two triangles are mathematically similar. Write each answer, yes or no, in the second column of the table.

Triangles Mathematically similar? (yes/no)

Triangles	Mathematically similar? (yes/no)
Not to scale 	.....
Not to scale 	.....
Not to scale 	.....
Not to scale 	.....

Question 12

A school has 540 students. This pie chart shows the way that all 540 students travel to the school. Each student either walked or cycled or travelled by bus or travelled by car.



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(a) Work out how many of the 540 students travel to the school by car.

(b) The number of students who walk is three times the number who cycle. Work out the sector angle for the students who walk to school. You do not need to draw this on the pie chart.