



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Junior Certificate Examination, 2013
Sample Paper

Mathematics

(Project Maths – Phase 1)

Foundation Level

Time: 2 hours

300 marks

Examination number

Centre stamp

Running total

For examiner			
Question	Mark	Question	Mark
1		11	
2		12	
3		13	
4		14	
5		15	
6		16	
7		17	
8		18	
9			
10		Total	

Grade

Instructions

There are eighteen questions on this examination paper. Answer **all** questions.

Questions do not necessarily carry equal marks. To help you manage your time during this examination, a maximum time for each question is suggested. If you remain within these times, you should have about 10 minutes left to review your work.

Write your answers in the spaces provided in this booklet. There is space for extra work at the back of the booklet. You may also ask the superintendent for more paper. Label any extra work clearly with the question number and part.

The superintendent will give you a copy of the *Formulae and Tables* booklet. You must return it at the end of the examination. You are not allowed to bring your own copy into the examination.

Marks will be lost if all necessary work is not clearly shown.

Answers should include the appropriate units of measurement, where relevant.

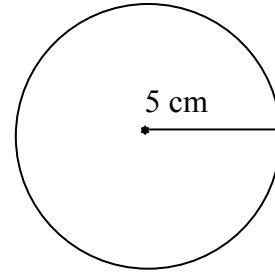
Answers should be given in simplest form, where relevant.

Write the make and model of your calculator(s) here:

Question 4

(suggested maximum time: 10 minutes)

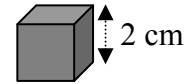
- (a) The radius of a circle is 5 cm.
Find the perimeter of the circle. Use $\pi = 3.142$.



- (b) (i) A rectangular block of wood is 10 cm long,
4 cm wide and 4 cm high.
Find the volume of the block in cm^3 .



- (ii) The length of a side of a solid wooden cube is 2 cm.
Find the volume of the cube in cm^3 .



- (iii) How many of these wooden cubes can be made from the block of wood in part (i)?

Question 7

(suggested maximum time: 10 minutes)

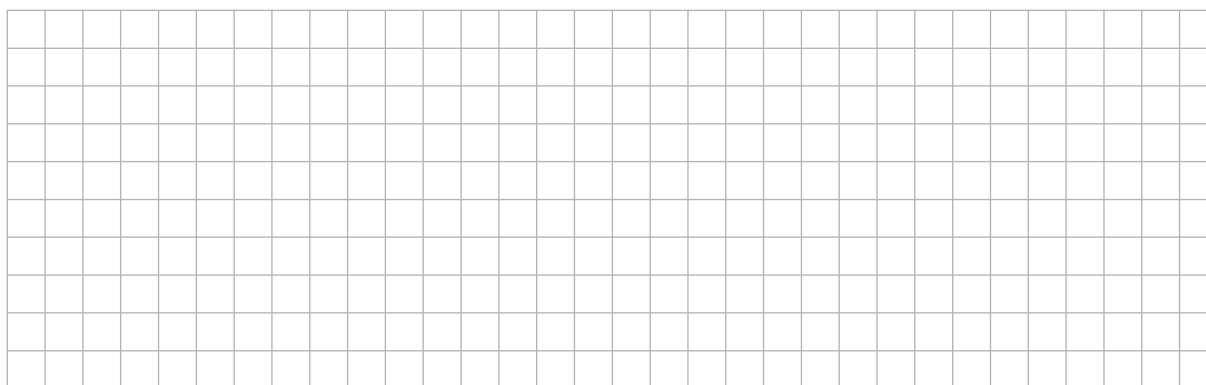
- (a) Find the value of $3a + 2b$, where $a = 4$ and $b = 5$.



- (b) Simplify $2(x + 4) + 5(x - 2)$.



- (c) Solve for x : $4x - 2 = 10$.

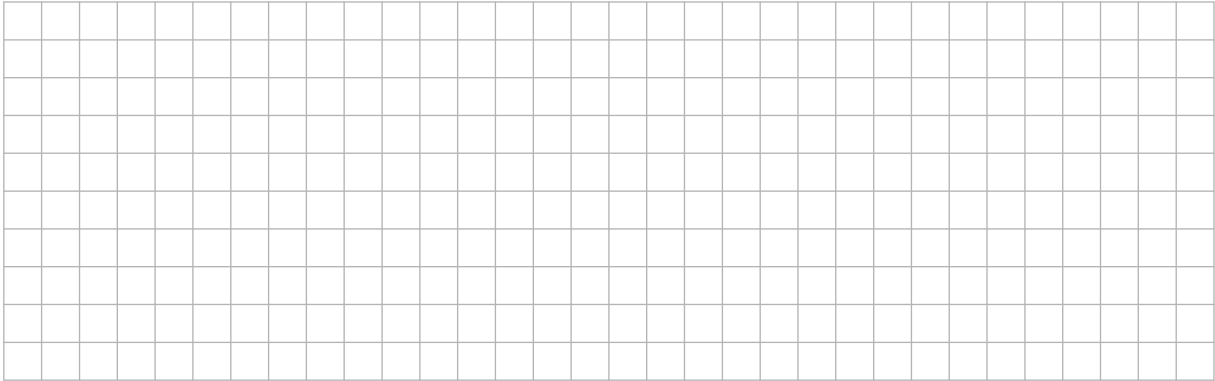


Question 8

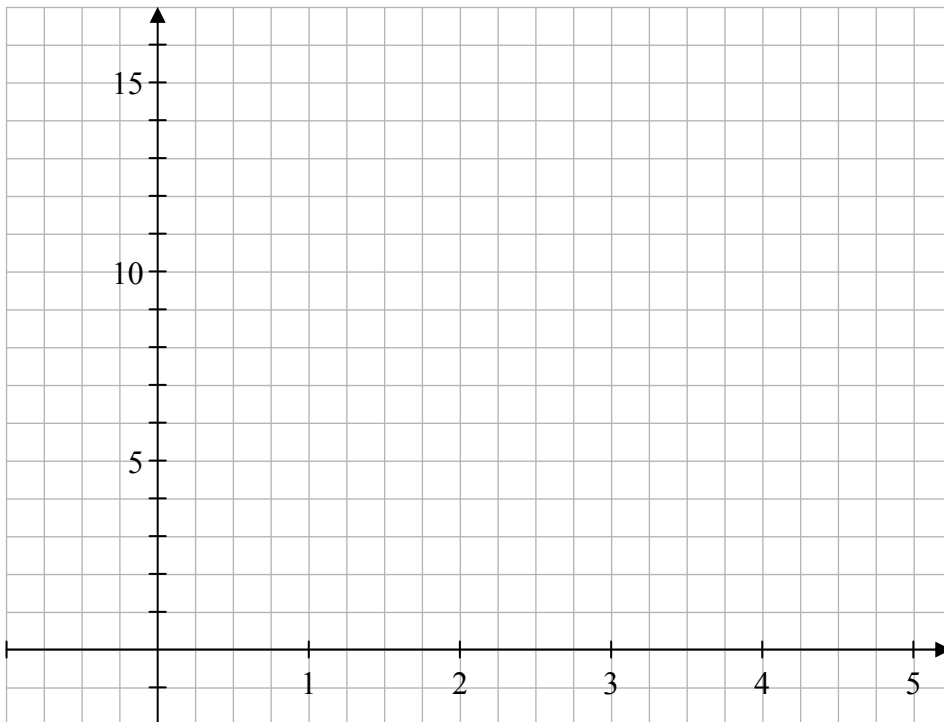
(suggested maximum time: 10 minutes)

- (a)** Given that $y = 2x + 1$, complete the table below.
Show all your work.

x	1	2	3	4	5
y			7		



- (b)** Use your answers from **(a)** to draw the graph of $y = 2x + 1$ from $x = 1$ to $x = 5$.



- (c)** Use your graph to find the value of y when $x = 1.5$. _____

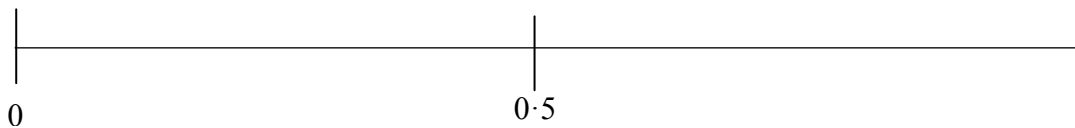
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Question 9**(suggested maximum time: 5 minutes)**

- (a) Estimate the probability for each of the events A, B, C, D and E listed below, and write your answers into the table.

	Probability
A name is picked at random from a list of 50 girls and 100 boys. A = A girl's name is picked.	
A fair coin is tossed once. B = A head is the outcome.	
One card is drawn at random from a pack of playing cards. C = The card is a diamond.	
A day is chosen at random from a list of the days of the week. D = The name of the day contains the letter a.	
One number is picked at random from the set {1, 2, 3, 4, 5, 7, 11, 13}. E = The number chosen is an odd number.	

- (b) Place the letter for each of the events at the most appropriate position on the probability scale below.

**Question 10****(suggested maximum time: 5 minutes)**

Sophie has a box of buttons.

<i>Contents</i> 3 yellow buttons 5 green buttons 7 red buttons 4 purple buttons 1 black button

- (a) How many buttons are in the box? _____

Sophie takes a button from the box at random.

- (b) What is the probability that Sophie will get a black button?

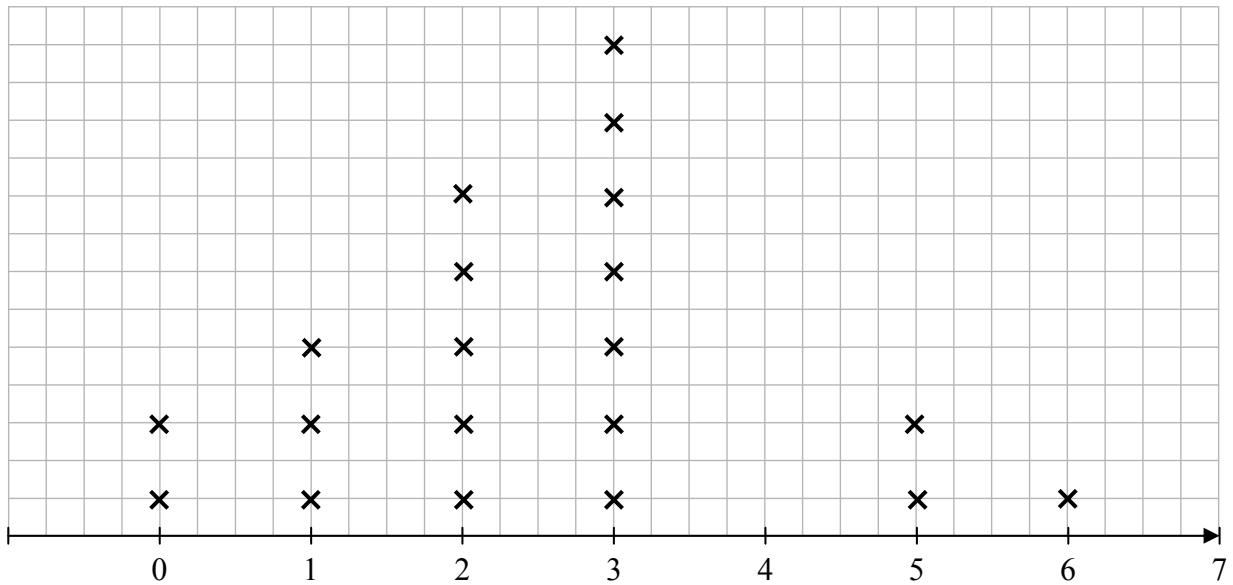
- (c) Write the missing colour in the sentence below.

The probability that Sophie will get a _____ button is $\frac{1}{4}$.

Question 12

(suggested maximum time: 5 minutes)

Students in a class were asked how many books they had read in the previous month. The results are shown in the line plot below.



- (a) What is the **mode** of the data? _____
- (b) How many students had read more than two books during the month? _____
- (c) How many students were in the class?

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Question 13

(suggested maximum time: 5 minutes)

These are the names of fifteen people on a youth club basketball squad.

Alex	Claire	Kevin	Yetunde	Brian
Claire	Lucy	Tom	Claire	James
Seya	Ryan	Jodi	Liam	Tom

- (a) What name is the **mode** of the data? _____
- (b) One person leaves the squad. A different person joins the squad. Now the **mode** is **Tom**.

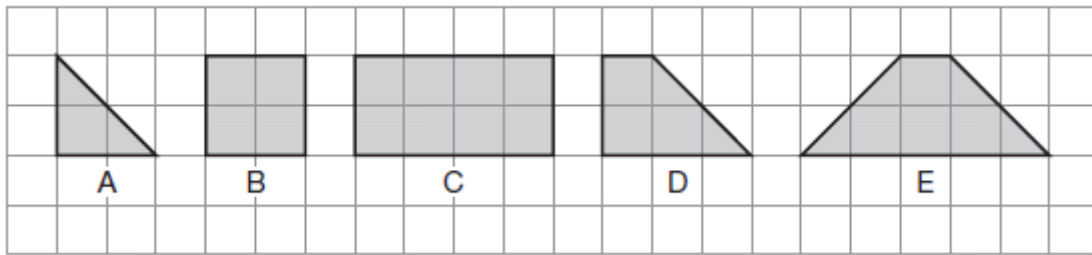
Write the missing names in the sentences below.

The name of the person who **leaves** is _____.

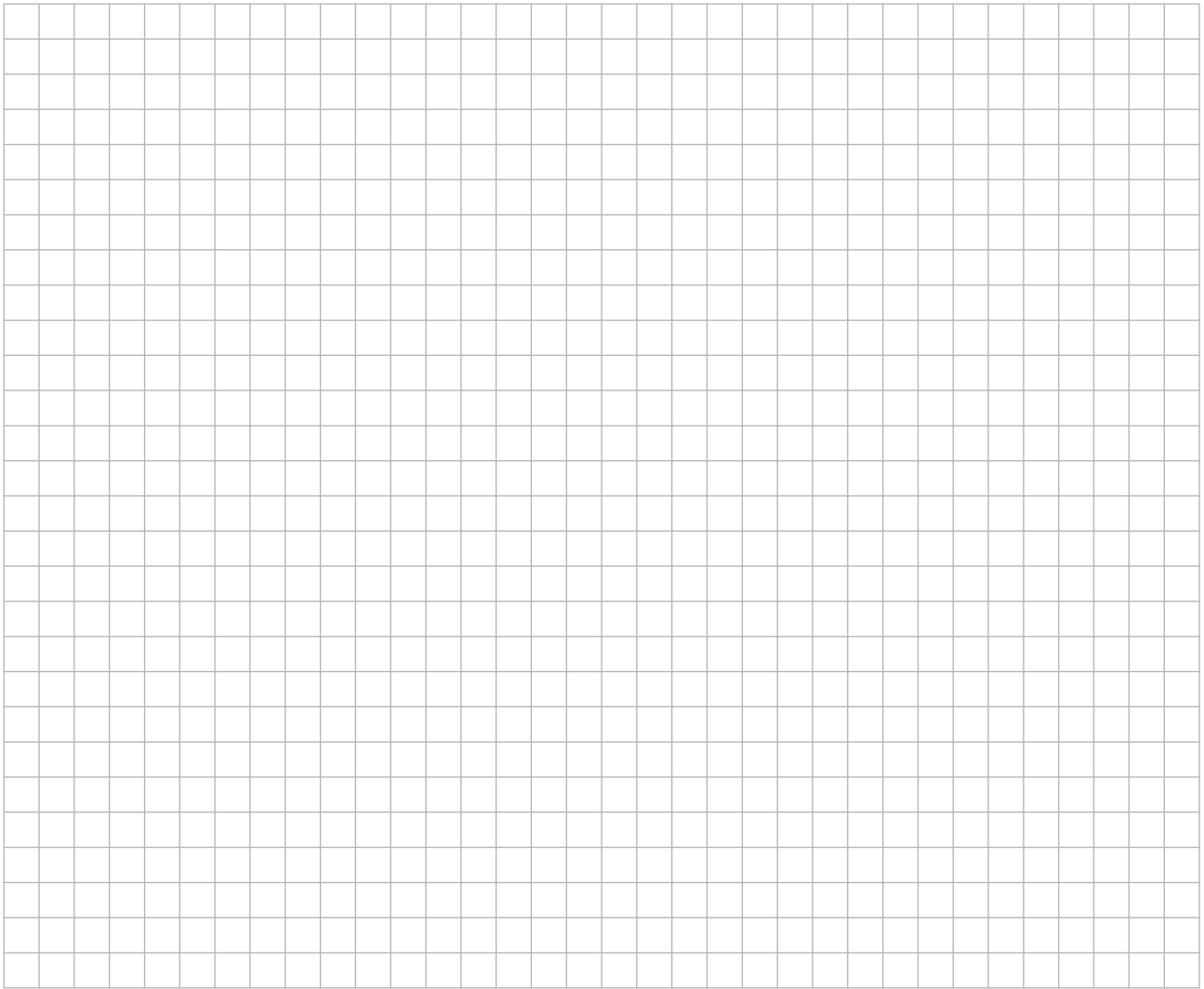
The name of the person who **joins** is _____.

Question 18**(suggested maximum time: 5 minutes)**

Look at these five shapes and complete the sentences below.



- (a) Shape _____ is the only shape with three sides.
- (b) Shape _____ is the only one with no right angles.
- (c) Shape _____ is the only one with no lines of symmetry.
- (d) Shape B is the only shape with four _____.
- (e) Shape _____ could be formed by joining together two copies of shape _____.



Note to readers of this document:

This sample paper is intended to help teachers and candidates prepare for the June 2013 examination in Mathematics under Phase 1 of *Project Maths*. The content and structure do not necessarily reflect the 2014 or subsequent examinations in the initial schools or in all other schools.

In the 2013 examination, some questions will be based on content from the previous syllabus. They will be similar in style and content to previous such questions. On this sample paper, portions of questions from the 2010 examination have been inserted to illustrate.

The number of questions on the examination paper may vary somewhat from year to year.

Junior Certificate – Foundation Level

Mathematics (Project Maths – Phase 1)

Sample Paper, 2013

Time: 2 hours