



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Junior Certificate Examination, 2013
Sample Paper

Mathematics

(Project Maths – Phase 3)

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		19	
10		Total	

Grade

Instructions

There are 19 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 booklet of *Formulae and Tables*. 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.

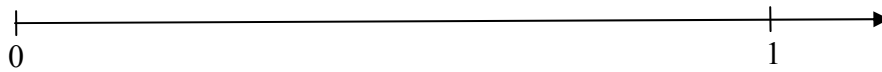
Answers should be given in simplest form, where relevant.

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

Question 2

(suggested maximum time: 2 minutes)

- (a) Represent the numbers 0.6 and 0.4 on the number line below.



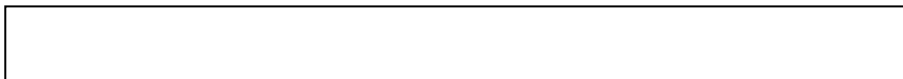
- (b) Which is the bigger of the two numbers? _____

- (c) Estimate what fraction of the strip below is shaded.

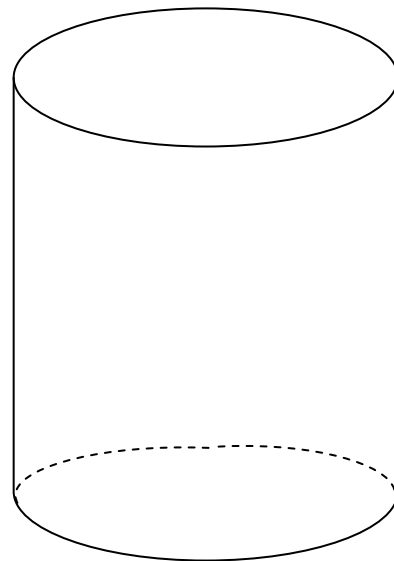


Answer:

- (d) Shade in $\frac{3}{4}$ of the strip below.



- (e) Show the approximate height of water in the cylinder if the cylinder is $\frac{4}{5}$ full.

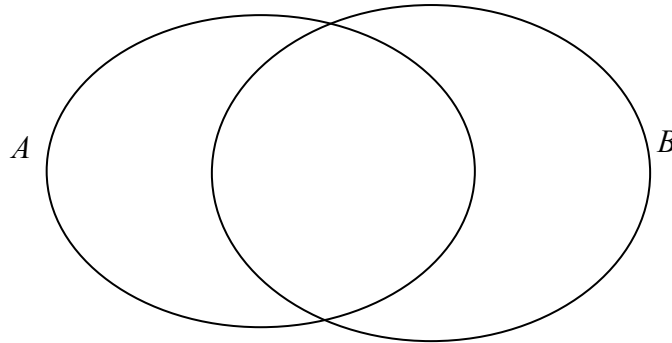


Question 5

(suggested maximum time: 5 minutes)

$A = \{ c, e, l, w \}$ and $B = \{ m, e \}$

(a) Show the elements of the sets A and B on the Venn diagram below.



(b) List the elements of $A \cup B$. $A \cup B = \{ \quad, \quad, \quad, \quad, \quad \}$

Question 6

(suggested maximum time: 5 minutes)

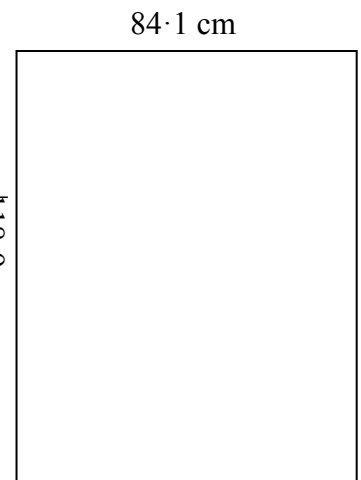
(a) The diagram shows an A0 –sized sheet of paper which measures 84·1 cm by 118·9 cm. In order to estimate the area of an A0 sheet:

Write down the nearest whole number to 84·1 _____

Write down the nearest whole number to 118·9 _____

Multiply **your** two answers to estimate the area.

_____ × _____ = _____



(b) Find the exact area of the sheet using the original measurements.

$84·1 \text{ cm} \times 118·9 \text{ cm} = \text{_____}$

(c) Find the difference between the exact area from (b) and your estimate of the area from (a).

Actual area	–	Estimated Area	=	Difference
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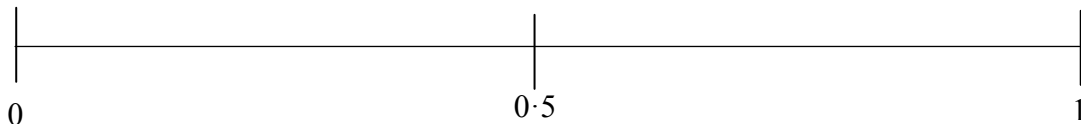
Question 9

(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.

Contents 3 yellow buttons 5 green buttons 7 red buttons 4 purple buttons 1 black button
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- (a) How many buttons are in the box? _____

Sophie takes a button from the box at random.

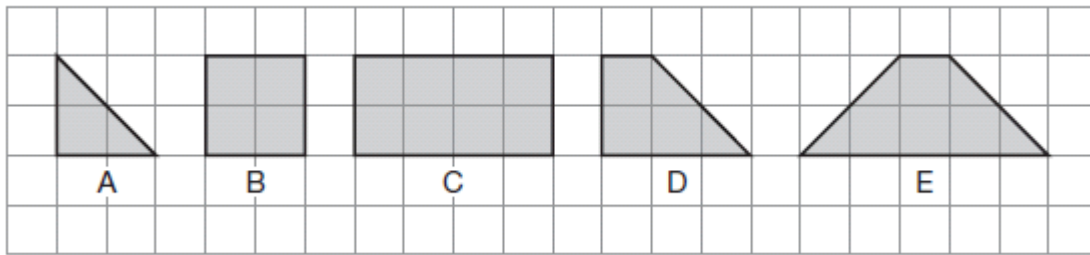
- (b) What is the probability that Sophie will get a black button?

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

The probability that Sophie will get abutton is $\frac{1}{4}$.

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

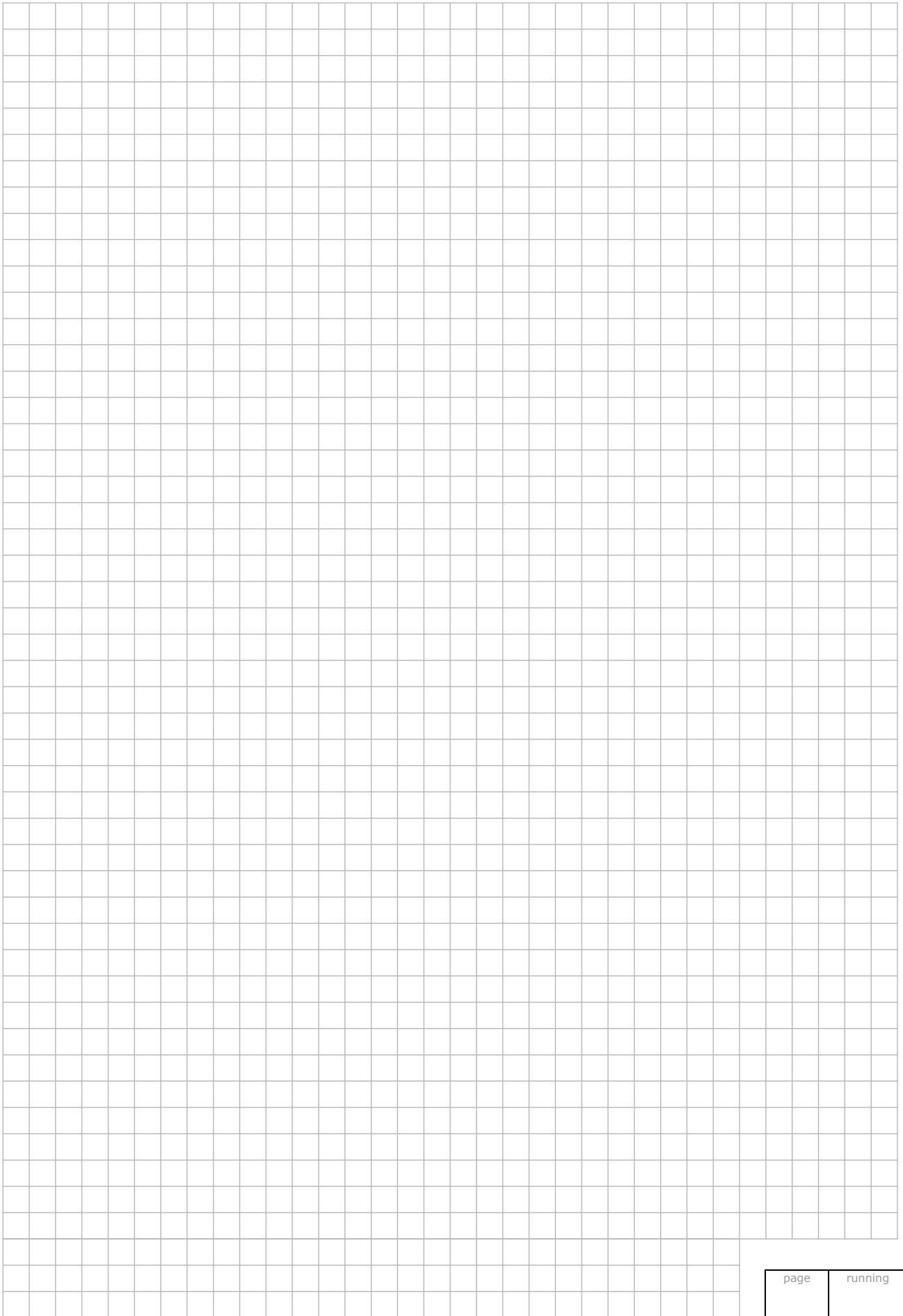
Look at these five shapes and complete the sentences below.



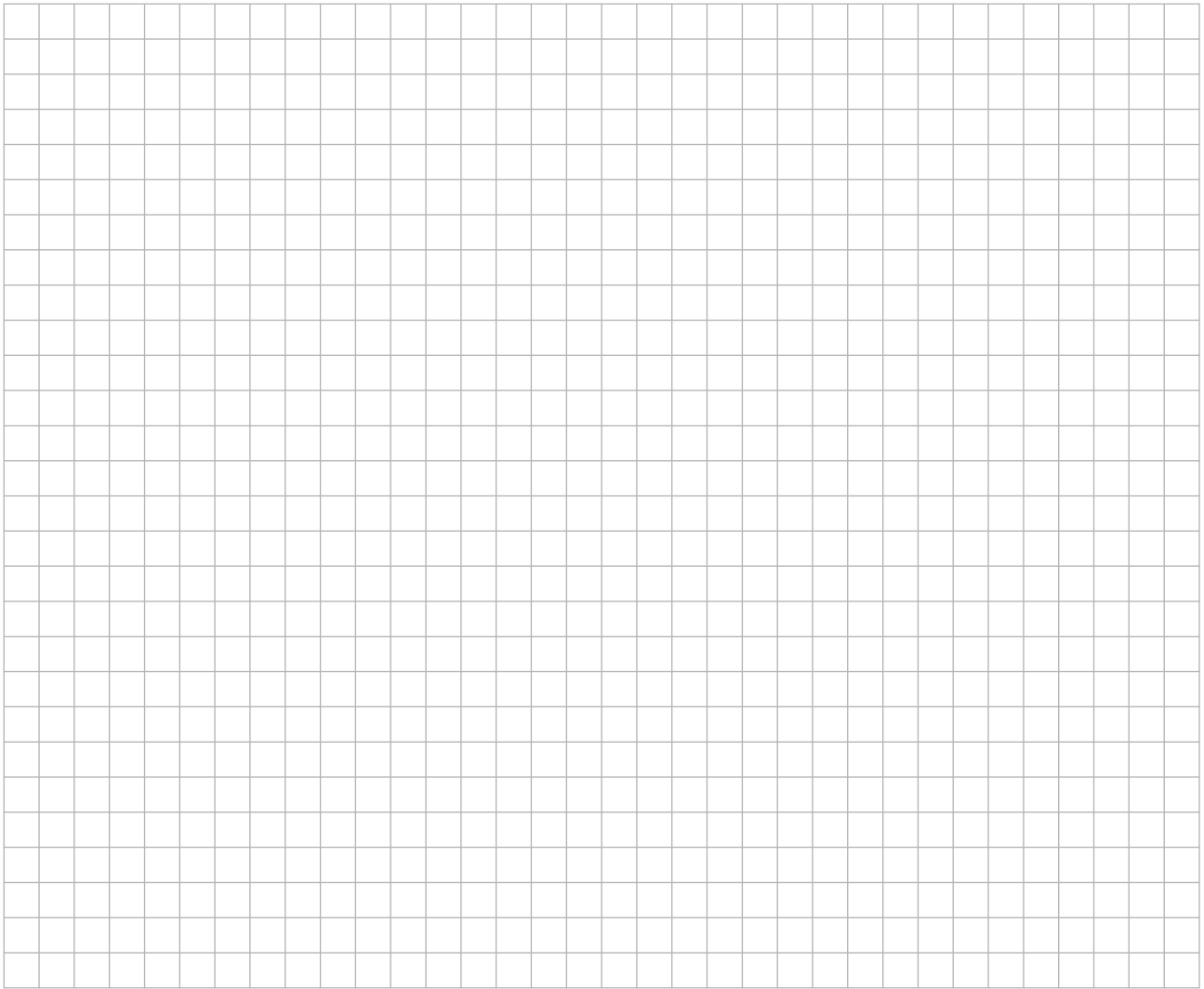
- (a) Shape _____ is the only shape with three sides.
- (b) Shape _____ is the only one with no right angles.
- (c) Shape _____ is the only one with no lines of symmetry.
- (d) Shape B is the only shape with four _____.
- (e) Shape _____ could be formed by joining together two copies of shape _____.

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You may use this page for extra work



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Note to readers of this document:

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

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

Junior Certificate – Foundation Level

Mathematics (Project Maths – Phase 3)

Sample Paper, 2013

Time: 2 hours