DULWICH COLLEGE SHANGHAI

IGCSE – Module 1 TEST – 55 Minutes 45 Marks

Name: _____ Date_____Teacher_____

1 On a mountain, the temperature decreases by 6.5 °C for every 1000 metres increase in height.
At 2000 metres the temperature is 10 °C.

Find the temperature at 6000 metres.

Answer ..... °C [2]

2

Write down all your working to show that the following statement is correct.

$$\frac{1+\frac{8}{9}}{2+\frac{1}{2}} = \frac{34}{45}$$

Answer

[2]

3

A large water bottle holds 25 litres of water correct to the nearest litre.
A drinking glass holds 0.3 litres correct to the nearest 0.1 litre.

Calculate the lower bound for the number of glasses of water which can be filled from the bottle.

Answer ..... [3]

4

Write the following numbers correct to one significant figure.

(a) 7682

Answer(a) ..... [1]

(b) 0.07682

Answer(b) ..... [1]

5

The number of spectators at the 2010 World Cup match between Argentina and Mexico was 82 000 correct to the nearest thousand.
If each spectator paid 2600 Rand (R) to attend the game, what is the lower bound for the total amount paid?
Write your answer in standard form.

Answer R ..... [3]

6

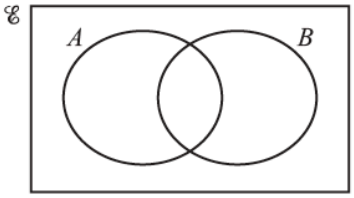
A carton contains 250 ml of juice, correct to the nearest millilitre.

Complete the statement about the amount of juice, j ml, in the carton.

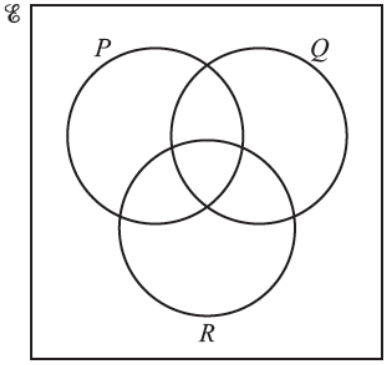
Answer ..... $\leqslant j <$ ..... [2]

7

Shade the required region in each of the Venn diagrams.



A'



$(P \cap R) \cup Q$

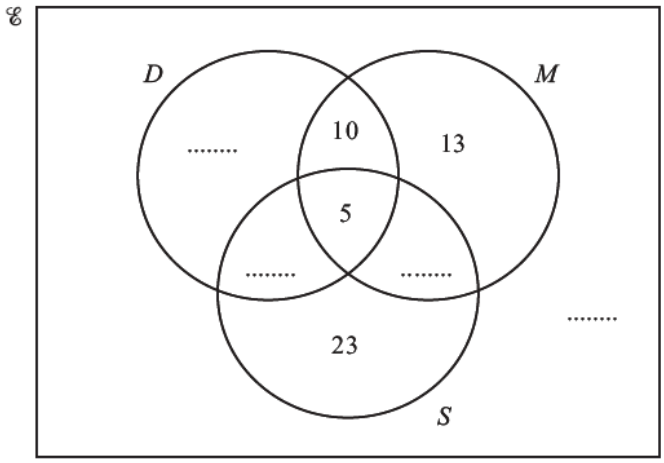
[2]

8

90 students are asked which school clubs they attend.

D = {students who attend drama club}
M = {students who attend music club}
S = { students who attend sports club}

39 students attend music club.
26 students attend **exactly two** clubs.
35 students attend drama club.



(a) Write the four missing values in the Venn diagram. [4]

(b) How many students attend

(i) all three clubs,

Answer(b)(i) ..... [1]

(ii) one club only?

Answer(b)(ii) ..... [1]

(c) Find

(i) $n(D \cap M)$,

Answer(c)(i) ..... [1]

(ii) $n((D \cap M) \cap S')$.

Answer(c)(ii) ..... [1]

9

Distances from the Sun can be measured in astronomical units, AU.
Earth is a distance of 1 AU from the Sun.
One AU is approximately 1.496×10^8 km.

The table shows distances from the Sun.

Name	Distance from the Sun in AU	Distance from the Sun in kilometres
Earth	1	1.496×10^8
Mercury	0.387	.....
Jupiter	.....	7.79×10^8
Pluto	.....	5.91×10^9

(a) Complete the table. [3]

(b) Light travels at approximately 300 000 kilometres per second.

(i) How long does it take light to travel from the Sun to Earth?
Give your answer in seconds.

Answer(b)(i) ..... s [2]

10

(a) Complete the table for the 6th term and the nth term in each sequence.

	Sequence	6th term		nth term
A	11, 9, 7, 5, 3			
B	1, 4, 9, 16, 25			
C	2, 6, 12, 20, 30			
D	3, 9, 27, 81, 243			
E	1, 3, 15, 61, 213			

[12]

(b) Find the value of the 100th term in

(i) Sequence A,

Answer(b)(i) ..... [1]

(ii) Sequence C.

Answer(b)(ii) ..... [1]

(c) Find the value of n in Sequence D when the nth term is equal to 6561.

Answer(c) $n =$ ..... [1]

(d) Find the value of the 10th term in Sequence E.

Answer(d) ..... [1]