IGCSE – Module 1 TEST – 55 Minutes 60 Marks

Name: _____ Date_____Teacher_____

1)

One January day in Munich, the temperature at noon was 3°C.
At midnight the temperature was –8°C.

Write down the difference between these two temperatures.

Answer ..... °C [1]

2)

Without using your calculator, work out $1\frac{5}{6}+\frac{9}{10}$.

You must show your working and give your answer as a mixed number in its simplest form.

Answer ..... [3]

3)

Without using your calculator, work out the following.
Show all the steps of your working and give each answer as a fraction in its simplest form.

(a) $\frac{11}{12}-\frac{1}{3}$

Answer(a) ..... [2]

(b) $\frac{1}{4} \div \frac{11}{13}$

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

4)

Show that $\left(\frac{1}{10}\right)^2 + \left(\frac{2}{5}\right)^2 = 0.17$.

Write down all the steps in your working.

Answer

[2]

5)

Write the following in order of size, **smallest** first.

$0.47 \qquad \frac{8}{17} \qquad \sqrt{0.22} \qquad \tan 25°$

Answer ..... < ..... < ..... < ..... [2]

6) Simplify

a) $5x^2 \times 3x$ [2]

b) $\frac{10x^4y}{2x^3y^2}$ [2]

7)

(a) Express $0\cdot0\dot{3}\dot{4}$ as a fraction.

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[2]

8)

(i) Write 5·324 correct to 2 decimal places.

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[1]

(ii) Write 74·63 correct to the nearest whole number.

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[1]

(iii) Write 65 839 correct to the nearest 1000.

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[1]

9)

A lake has an area of 63 800 000 000 square metres.

Write this area in square kilometres, correct to 2 significant figures.

Answer ..... km^2 [2]

10)

The mass of a carbon atom is 2×10^{-27} g.

How many carbon atoms are there in 6 g of carbon?

Answer ..... [2]

11)

Calculate $(4.3 \times 10^{8}) + (2.5 \times 10^{7})$.

Give your answer in standard form.

Answer ..... [2]

12)

Calculate, giving your answers in standard form,

(a) $2 \times (5.5 \times 10^{4})$,

Answer(a) ..... [2]

(b) $(5.5 \times 10^{4}) - (5 \times 10^{4})$.

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

13)

(a) (i) Express 3969 as a product of prime numbers in index form.

[3]

(ii) Explain how you know that 3969 is a perfect square.

[1]

(b) Find the *n*th term of the following sequence of numbers.

8, 20, 32, 44, 56, ...

[2]

14)

(i) Write the four missing terms in the table for sequences A, B, C and D.

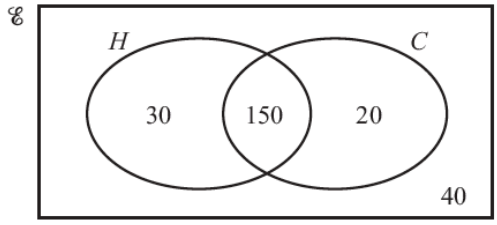
Term	1	2	3	4	5		n
Sequence A	-4		2	5	8		$3n-7$
Sequence B	1	4	9	16	25		
Sequence C	5	10	15	20	25		
Sequence D	6	14	24	36	50		

[4]

(ii) Which term in sequence D is equal to 500?

Answer(b)(ii) ..... [2]

15)



$\mathscr{E}$ = {240 passengers who arrive on a flight in Cyprus}

H = {passengers who are on holiday}

C = {passengers who hire a car}

(a) Write down the number of passengers who

(i) are on holiday,

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

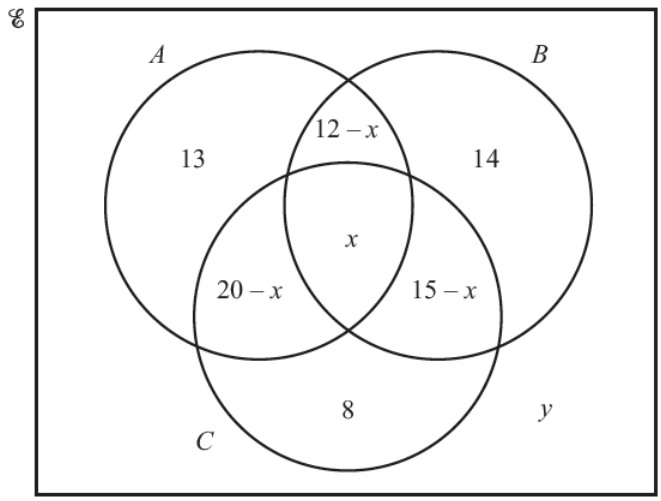
(ii) hire a car but are not on holiday.

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

(b) Find the value of $n(H \cup C')$.

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

16)



The Venn diagram shows the number of elements in sets A, B and C.

(a) $n(A \cup B \cup C) = 74$

Find x.

Answer(a) $x =$ ..... [2]

(b) $n(\mathscr{E}) = 100$

Find y.

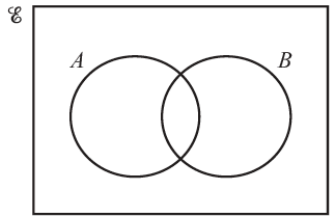
Answer(b) $y =$ ..... [1]

(c) Find the value of $n((A \cup B)' \cap C)$.

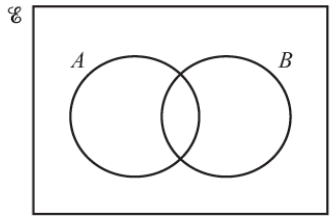
Answer(c) ..... [1]

17)

Shade the required region on each Venn diagram.



$A' \cup B$



$A' \cap B'$

[2]

18)

The sides of a rectangle are 6.3 cm and 4.8 cm, each correct to 1 decimal place.

Calculate the upper bound for the area of the rectangle.

Answer ..... cm^2 [2]

19)

The length of the edge of a wooden cube is 4·5 cm, measured correct to the nearest mm.

(a) Write down the least and greatest possible length of the edge of the cube.

Least length ..... cm Greatest length ..... cm
[2]

(b) The length of a shelf is 190 cm, measured correct to the nearest 10 cm.

Explain, showing all your calculations, why it is not certain that you can place 41 of the cubes, side by side, along the shelf.

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[4]