CODE	

HIGH 5
JUNIOR MATHEMATICIANS CHALLENGE

Qualifying Test

21st April 2021

question no.	1	2	3	4	5	6	7	8	9	10
marks										

question no.	11	12	13	14	15	16	17	18	19	20
marks										

question no.	21	22	23
marks			

SCORE OBTAINED	

MINISTRY FOR EDUCATION
Directorate for Learning and Assessment Programmes

Section A

Answer ALL Questions.
Tick (✓) the correct answer in each question.
Each question carries 2 marks.

1. Which number is **one thousand times 0.735**?

   a. 7.35 ☐
   b. 73.5 ☐
   c. 735 ☐
   d. 7350 ☐

2. Carla sticks four shapes on her bedroom windowpanes.
   She sticks the Triangle **below** the Circle,
   the Square on an **even numbered** windowpane and
   the Heart on the **right** of the Triangle.
   Which **shape** is found on windowpane numbered 1?

   a. Triangle ☐
   b. Circle ☐
   c. Heart ☐
   d. Square ☐

1	2
4	3

3. Paul is thinking about the **smallest** possible **5-digit number** with a **product** of its **digits** equal to **9**.
What is the **digit total** of this 5-digit number?

a. 5 ☐

b. 9 ☐

c. 13 ☐

d. 14 ☐

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4. **Work out** the **missing number**.

$$24 \times \square = 648 \div 9$$

a. 2 ☐

b. 3 ☐

c. 4 ☐

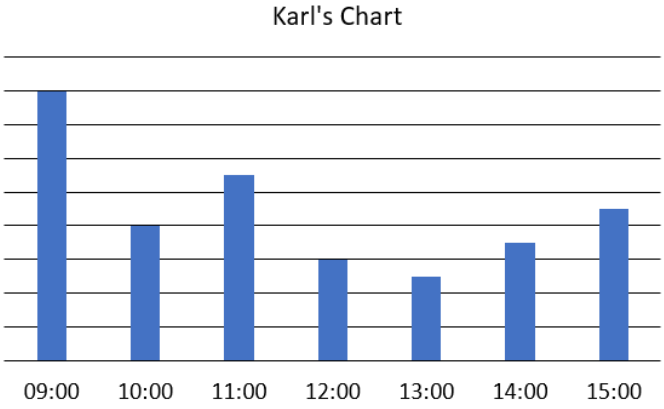
d. 5 ☐

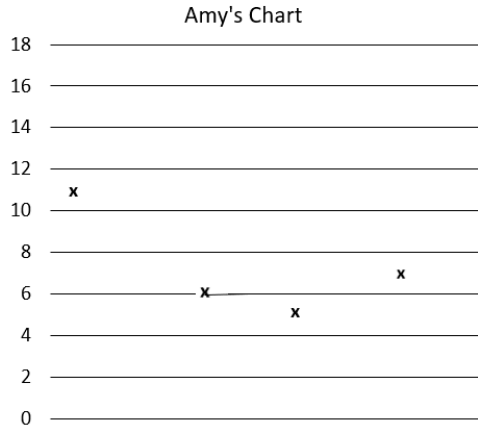
5. Karl and Amy collected the **same** data about the number of persons in a library.

The **charts** below show their data collected.

Some labels are **missing**.

Karl's chart starts at **9 a.m.**





At **what** time does Amy's chart **finish**?

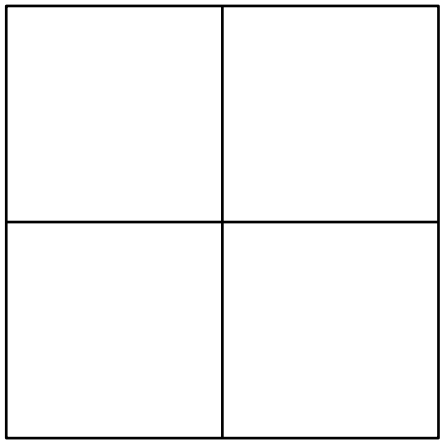
a. 3:00 p.m. ☐

b. 11:00 a.m. ☐

c. 2:00 p.m. ☐

d. 7:00 p.m. ☐

6. How many **more rectangles** than **squares** are there in the diagram below?



a. 0 ☐

b. 1 ☐

c. 4 ☐

d. 5 ☐

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7. The **area** of a square is **equal** to the area of a rectangle.

   The rectangle is 9 cm by 4 cm.

   Work out the **perimeter of the square**.

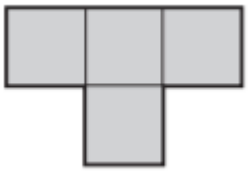
a. 6 cm ☐

b. 9 cm ☐

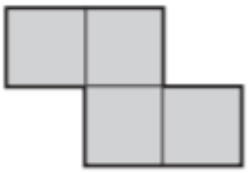
c. 12 cm ☐

d. 24 cm ☐

8. Mark has **two** T-Shapes made of 4 squares each.
Tania has **two** Z-Shapes made of 4 squares each.
Mark fits his two T-Shapes together to create *a* **new shape**.
Tania fits her two Z-Shapes together to create *a* **new shape.**

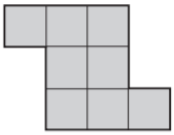


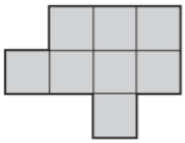
T-Shape

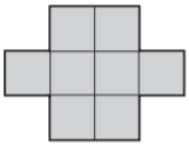


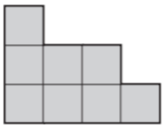
Z-Shape

Which **shape** can both Mark and Tania create using their **two shapes**?

a.  ☐

b.  ☐

c.  ☐

d.  ☐

9. Laura noticed that her father is **three times** as old as she is today.
The sum of their ages in **4** years' time will be **48**.
What is Laura's age **today**?

a. 10 years ☐

b. 11 years ☐

c. 12 years ☐

d. 13 years ☐

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10. Claire is facing **North-East**.
She turns **clockwise.**
She is now facing **South**.
What **angle** does Claire turn?

a. 45° ☐

b. 135° ☐

c. 225° ☐

d. 315° ☐

11. Philip **multiplied** a number by **12** and then **added 12** to his answer.

His final answer is **360**.

What number did Philip **start** with?

a. 15 ☐

b. 29 ☐

c. 30 ☐

d. 31 ☐

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12. Which is the **smallest fraction**?

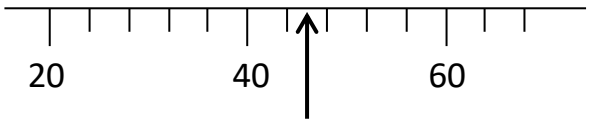
a. $\frac{1}{4}$ ☐

b. 0.2 ☐

c. $10 \div 30$ ☐

d. $\frac{1}{2}$ of $\frac{1}{3}$ ☐

13. Which **number** is the arrow pointing to?



a. 43 ☐

b. 44 ☐

c. 45 ☐

d. 46 ☐

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14. How many **metres squared (m^2)** are there in **1 kilometre squared (km^2)**?

a. 1 000 m^2 ☐

b. 10 000 m^2 ☐

c. 100 000 m^2 ☐

d. 1 000 000 m^2 ☐

15. A student noted that

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 = \frac{9 \times 10}{2} = 45$$

What is the **sum** of all the whole numbers from 1 to 100 (inclusive)?

a. 10 100 ☐

b. 9 900 ☐

c. 5 050 ☐

d. 4 950 ☐

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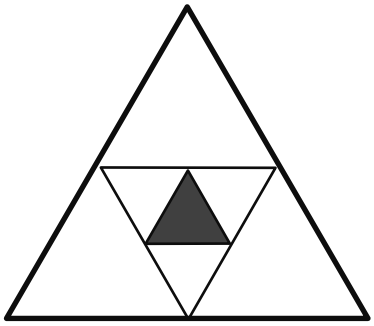
16. What **fraction** of the largest triangle is **shaded**?

a. $\frac{1}{16}$ ☐

b. $\frac{1}{7}$ ☐

c. $\frac{1}{8}$ ☐

d. $\frac{1}{4}$ ☐



17. Ms Borg is at Ċirkewwa to get the Gozo Ferry.
She arrived at Ċirkewwa at **9.42 a.m.**
The next ferry departs at **10.12 a.m.**
How many **seconds** does Ms Borg have to wait?

a. 3600 seconds ☐

b. 1800 seconds ☐

c. 180 seconds ☐

d. 30 seconds ☐

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18. **31st October 2021** is a **Sunday.**
30th November 2021 is a:

a. Monday ☐

b. Tuesday ☐

c. Wednesday ☐

d. Thursday ☐

19. Maria has **€2.50** in her purse.
She buys **some** pens and pencils from the stationery.
Each pen costs **15c** and each pencil costs **10c**.
She buys **4 times** as many pens as pencils.
She has **40c left**.
How many **pens** does she buy?

a. 3 pens ☐

b. 12 pens ☐

c. 15 pens ☐

d. 18 pens ☐

Section B

Answer ALL Questions.

Show your working.

Each question carries 3 marks.

20. Luke uses **nine different digits** to form **3 three-digit numbers**.
He then **adds** these 3 three-digit numbers formed.
What is the **smallest** possible **total** he can get?

21. Max and Kim each have a box containing the **same** number of marbles.
Kim puts **half** of her marbles into Max's box.
Max wants to make the number of marbles in each box **equal** again.
What **fraction** of the marbles in his box must Max put into Kim's box?

22. There are **24** students in a class.
They have a party, for which each boy gets **2 balloons** and each girl gets **4 balloons**.
The total number of balloons is **68**.
How many **girls** are there in the class?

girls

23. The following **cube** is made up of **smaller cubes**.

A small cube is considered **visible** if you can see at least **one** of its **faces** in the below diagram .

How many of the **small cubes** are **not visible** in this diagram?

small cubes

End of test