

Examination for the Enlistment of Soldiers in the Armed Forces of Malta

Mathematics SAMPLE PAPER 2023

Instructions to candidates:

- This examination paper consists of **THREE** sections: A, B and C. Answer all 50 questions in these sections.
- Each question contains four possible answers, but only **ONE** is correct.
- Enter your answers on the Answer Sheet provided. Mark **ONLY** the correct answer by using a pencil.


e.g. If answer C is selected, fill in the appropriate circle as shown below.

50.	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/> C	<input type="radio"/> D
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- Each question carries two (2) marks.
- Diagrams are **NOT** drawn to scale.
- The use of calculators is allowed.

Section A

**This Section contains twenty (20) questions (from 1 to 20).
Answer ALL questions.**

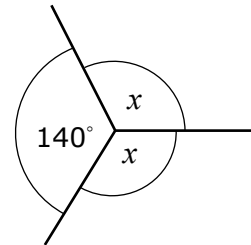
1	What is 126.3759 correct to 3 decimal places?	A) 126	B) 127	C) 126.376	D) 126.375
2	Express $\frac{3}{5}$ as a percentage.	A) 30%	B) 35%	C) 60%	D) 6%
3	What is the value shown by the arrow? 	A) 0.5	B) 1.5	C) -1.5	D) -0.5
4	Which one of the following is the largest? 21.725 21 $\frac{3}{4}$ 2.1 $\times 10$ 21.5	A) 21.725	B) 21 $\frac{3}{4}$	C) 2.1 $\times 10$	D) 21.5
5	Simplify the ratio: 150 : 400	A) 3 : 80	B) 50 : 80	C) 3 : 8	D) 15 : 4
6	Convert 5 kg 24 g to grams.	A) 5.24 g	B) 524 g	C) 5240 g	D) 5024 g
7	Kate finishes work at half past six in the evening. What is this time in 24-hour clock format?	A) 06:30	B) 18:50	C) 06:50	D) 18:30

8 How much is 72% of €35?

- A) €122.5 B) €25.20 C) €72.25 D) €23.50

9 Calculate the value of the angle marked x .

Diagram not drawn to scale.



- A) 110° B) 80° C) 140° D) 100°

10 A mobile phone costs six times as much as a calculator.
The calculator costs €19.75. How much does the mobile phone cost?

- A) €25.75 B) €118.50 C) €59.25 D) €100.00

11 Here are Morgan's test scores:

23, 35, 42, 36, 42

What is the range of Morgan's test scores?

- A) 42 B) 35.6 C) 35.5 D) 19

12 Describe the probability of getting a Heads when tossing a fair coin.

- A) Very likely B) Likely C) Evens D) Unlikely

13 Which one of the following numbers is **prime**?

768 345 81 47

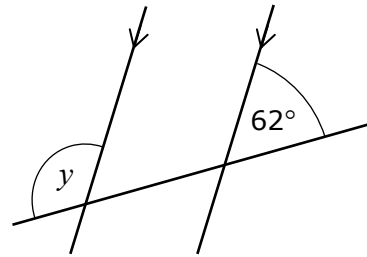
- A) 47 B) 81 C) 345 D) 768

14 A cuboid measures 10 cm by 44 cm by 66 cm.
Work out the volume of the cuboid.

- A) 8008 cm^3 B) $29\,040 \text{ cm}^3$ C) 2904 cm^3 D) $58\,080 \text{ cm}^3$

15 Calculate the value of the angle marked y .

Diagram not drawn to scale.

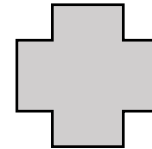


- A) 128° B) 118° C) 162° D) 298°

16 Daniela has a 2.5 litre bottle full of water. She poured 130 ml of it in a measuring jug. How many millilitres of water are left in the bottle?

- A) 2487 ml B) 120 ml C) 1200 ml D) 2370 ml

17 How many lines of symmetry does the shape have?



- A) 1 B) 2 C) 4 D) 8

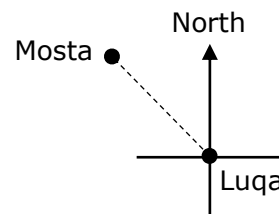
18 The point $(-2, w)$ is on the line $y = 2x + 6$. Find the value of w .

- A) 2 B) -2 C) 10 D) 8

19 Tina and Carlo share €425 between them in the ratio 9:8 respectively. How much does Carlo get?

- A) €212.50 B) €225 C) €200 D) €53.13

20 What is the direction of Mosta from Luqa?



- A) SE B) SW C) NE D) NW

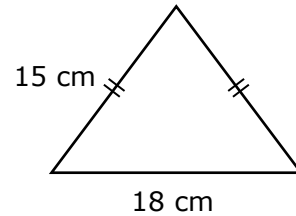
20 x 2 marks = **40 marks**

Section B

**This Section contains twenty (20) questions (from 21 to 40).
Answer ALL questions.**

21 Calculate the perimeter of this triangle.

Diagram not drawn to scale.



- A) 33 cm B) 48 cm C) 51 cm D) 66 cm

22 What is 0.28 as a **fraction** in its simplest form?

- A) $\frac{28}{100}$ B) $\frac{8}{50}$ C) $\frac{14}{50}$ D) $\frac{7}{25}$

23 Work out: $5^2 - \sqrt{81}$

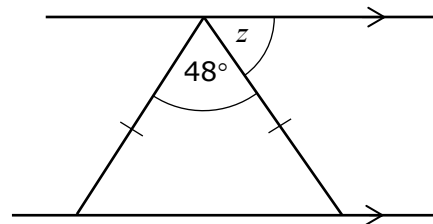
- A) 16 B) 25 C) 61 D) 43

24 A film starts at 3:30 pm and finishes at 5:25 pm. How long is the film?

- A) 1 h 55 min B) 1 h 45 min C) 2h 5 min D) 2 h 55 min

25 Calculate the size of the angle marked z .

Diagram not drawn to scale.



- A) 132° B) 66° C) 156° D) 69°

26 Express 12 cm as a percentage of 3 m.

- A) 4% B) 25% C) 3% D) 5%

27 Work out: $\frac{2 \times 2.5}{4 - (-1)}$

- A) 0.83 B) 1 C) 2.25 D) 1.67

28 The exchange rate is 1 euro (€) to 1.08 US Dollar (USD).
How much euros will you receive in exchange for 500 USD?

- A) €540 B) €2.08 C) €462.96 D) €500

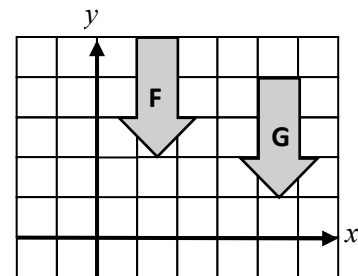
29 Which one of the following is the equation of a line with gradient -3 and y -intercept 2 .

- A) $y = 2x - 3$ B) $y = 3x - 2$ C) $y = -3x + 2$ D) $x = 3 - 2y$

30 Four faces of a cube are painted grey. Each side of the cube is 1.5 cm long.
Work out the area painted in grey.

- A) 9 cm² B) 2.25 cm² C) 13.5 cm² D) 6.0 cm²

31 Arrow F is translated to arrow G
by column vector:



- A) $\begin{pmatrix} -3 \\ 1 \end{pmatrix}$ B) $\begin{pmatrix} 3 \\ -1 \end{pmatrix}$ C) $\begin{pmatrix} 3 \\ 1 \end{pmatrix}$ D) $\begin{pmatrix} -3 \\ -1 \end{pmatrix}$

32 Silvio needs 450 g of mushrooms to prepare a soup for 4 people.
Calculate the amount of mushrooms needed to prepare a soup for 10 people.

- A) 180 g B) 1800 g C) 1125 g D) $11\ 250$ g

33 Brass is made from zinc and copper in the ratio $7 : 13$, respectively.
A brass ornament contains 210 g of zinc.
How many grams of copper does the ornament contain?

- A) 113.1 g B) 390 g C) 136.5 g D) 30 g

34 Work out the value of p , when $q = 3$ and $r = -2$.

$$p = 5q + 2r$$

- A) 11 B) -4 C) 6 D) 19

35 The mean age of a group of people in a room is 26 years. If their total age is 130 years, how many people are present in the room?

- A) 156 B) 6 C) 5 D) 104

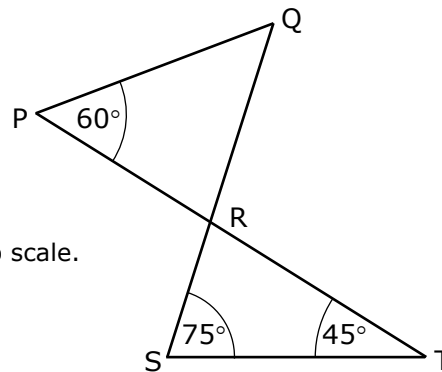
36 What is the three-digit bearing for northeast (NE)?

- A) 045° B) 135° C) 270° D) 315°

37 Expand: $3(a + 5b) + 4(3a - 8)$

- A) $6a + 15b + 8$
B) $15a + 15b - 32$
C) $6a + 5b - 8$
D) $15a + 5b + 32$

38 What type of triangle is PQR?

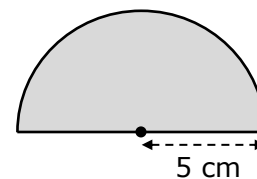


- A) right-angled B) Isosceles C) equilateral D) scalene

39 In a raffle, a total of 450 tickets are sold. The prize for the first ticket drawn is a painting. If Casey buys twenty-five tickets, what is the probability that she will win the painting?

- A) $\frac{1}{18}$ B) $\frac{1}{9}$ C) $\frac{1}{4}$ D) $\frac{1}{2}$

40 Calculate the area of this semicircle.



- A) 15.7 cm² B) 78.5 cm² C) 39.3 cm² D) 31.4 cm²

20 x 2 marks = **40 marks**

Section C

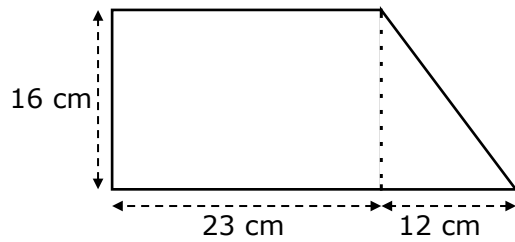
This Section contains ten (10) questions (from 41 to 50).

Answer ALL questions.

41 What is the Least Common Multiple (LCM) of 5, 10 and 8?

- A) 8 B) 20 C) 10 D) 40

42 Work out the total area of this shape.



- A) 464 cm² B) 560 cm² C) 110 cm² D) 280 cm²

43 Which of the following show the product of the prime factors of 360?

- A) $2^3 \times 3 \times 15$ B) $2^3 \times 5 \times 9$ C) $3^2 \times 5 \times 8$ D) $2^3 \times 3^2 \times 5$

44 The scale of a map is 1 : 50 000.
The distance between two villages on the map is 8.4 cm.
What is the actual distance in kilometres?

- A) 0.42 km B) 42 km C) 4.2 km D) 420 km

45 Make p the subject of the formula.

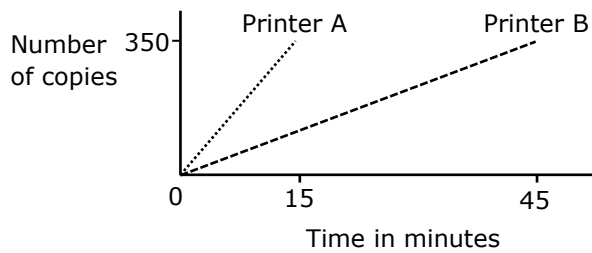
$$3p - 2 = m$$

- A) $\frac{2m}{3}$ B) $\frac{3m}{2}$ C) $\frac{m-2}{3}$ D) $\frac{m+2}{3}$

46 A new curtain is 3.40 m long. When washed it shrank by 1.5%.
Calculate the length of the curtain after it was washed, correct to the nearest centimetre.

- A) 3.35 m B) 3.39 m C) 3.25 cm D) 3.34 m

- 47 The graph shows the times that Printer A and Printer B take to perform a job. Which one of the following statements is represented by the graph?

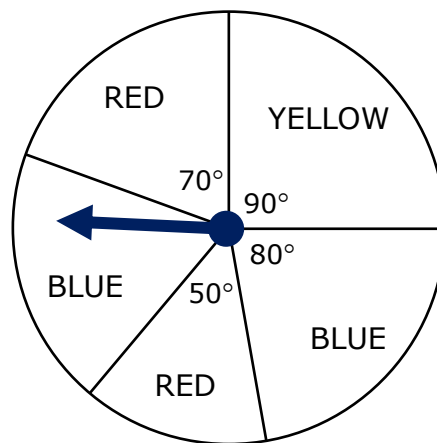


- A) Printer A takes three times as much time as Printer B to finish the job.
 B) Printer B takes three times as much time as Printer A to finish the job.
 C) Printer A takes a quarter of the time Printer B takes to finish the job.
 D) Printer B takes a third of the time Printer A takes to finish the job.

- 48 Cameron invested €9000 in Royal Bank, which offers a simple interest rate of 2% per annum. After how many years will the interest amount to €1080?

- A) 5 B) 6 C) 7 D) 8

- 49 A spinner has three different colours, as shown in the diagram. The arrow is spun once. What is the probability of it landing on RED?



- A) $\frac{1}{3}$ B) $\frac{2}{5}$ C) $\frac{1}{2}$ D) $\frac{2}{3}$

- 50 At noon the hour hand of a clock points towards South. In which direction will the hour hand point at 15:00?

- A) North B) South C) East D) West

10 x 2 marks = **20 marks**

TOTAL: 100 MARKS