

AMERICAN ACADEMY LARNACA

**ENTRANCE EXAMINATIONS
MARCH 23rd 2019**

M A T H E M A T I C S

TIME: 1 hour and 30 minutes

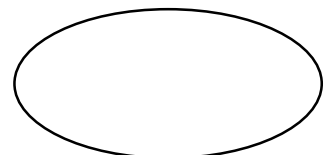
INSTRUCTIONS

- There are **12** questions in **PART A** and **15** questions in **PART B**.
- Full marks will be given if you answer correctly ALL questions.
- The total marks of the test is **100**.
- Work fast, but carefully and make sure you show all your workings.
- The marks given are shown at the end of each question.

Do not write anything in the box at the end of each page

Calculators are NOT allowed

SCORE



SECTION A:

1. Find the value of the following:

(a) $3047 + 243 - 26$

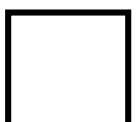
=
(2 marks)

(b) $32.14 + 47 - 3.1 + 17.9$

=
(2 marks)

(c) $675.04 - 13.404$

=
(1 mark)



2. Find the value the of the following:

(a) 30×5.20

=
(1 mark)

(b) 0.10×0.473

=
(1 mark)

(c) $465 \div 0.5$

=
(1 mark)



3. Find the value of the following:

(a) $8 \div (240 \div 30)$

=

(2 marks)

(b) $(750 \div 25) \times (45 \div 0.9)$

=

(2 marks)

4. Find the value of the following, giving your answer in the appropriate unit.

(a) $9.2 \text{ km} - 8800 \text{ m} + 300 \text{ cm}$

Answer:.....m

(b) $12.60 \text{ kg} + 420 \text{ g} - 7.8 \text{ kg}$

Answer:..... kg

(4 marks)



5. Find the value:

(a) $(34.7 \div 0.5) \times 2.1$

=
(2 marks)

(b) $(460 + 55.8) - 13.77$

=
(2 marks)

(c) $(46.5 - 11.3) \times (3.94 - 2.41)$

=
(2 marks)



6. Find the missing number in the box:

(a) $\times 239.5 = 23950$

=.....

(b) $72.65 \div$ $= 0.7265$

=.....

(c) $33.333 \times$ $= 0.33333$

=.....

(d) $5930 \div 5.93 =$

=.....

(4 marks)

7. Here is a list of numbers.

4 6 8 11 15 33 44

(a) From the list, write down a factor of 42

(b) From the list, write down a multiple of 22

.....

.....

(c) From the list, write a different number in each box to make the statement true.

\div \times $= 12$

(d) Write down the Highest Common Factor of 4 and 6.

(4 marks)

8. Write the following in ascending order.

(a) 7.47 $7\frac{3}{5}$ 7.04 7.58 $7\frac{5}{8}$

Answer:,,,,

(b) 0.4 $\frac{11}{30}$ 50% $\frac{7}{15}$

Answer:,,,

(4 marks)



9. Work out the following fractions giving your answers to the simplest form.

(a) $5\frac{2}{9} + 2\frac{3}{5}$

=.....

(1 mark)

(b) $3\frac{1}{3} - 1\frac{5}{6}$

.....

(2 marks)

(c) $4\frac{2}{3} \times \left(5\frac{1}{7} + \frac{9}{14}\right)$

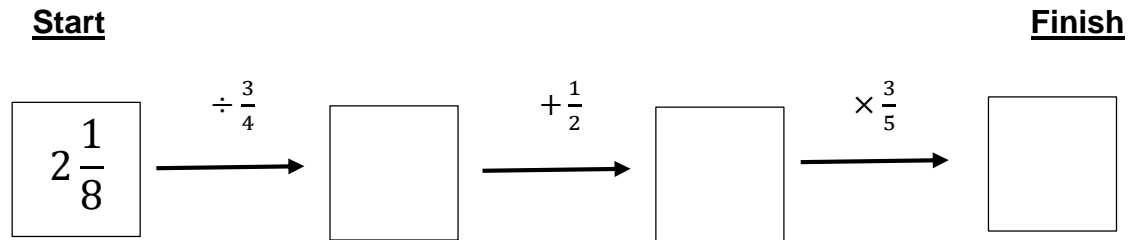
=.....

(2 marks)



10.

(a) Fill in the boxes.



=.....
(3 marks)

(b) Given that:

$$32 \times 15 = 480$$

Find the answers to the following equations without any calculations.

(I) $32 \times 30 = \dots\dots\dots$

(II) $32 \times 7.5 = \dots\dots\dots$

(III) $16 \times 30 = \dots\dots\dots$

(IV) $480 \div 3.2 = \dots\dots\dots$

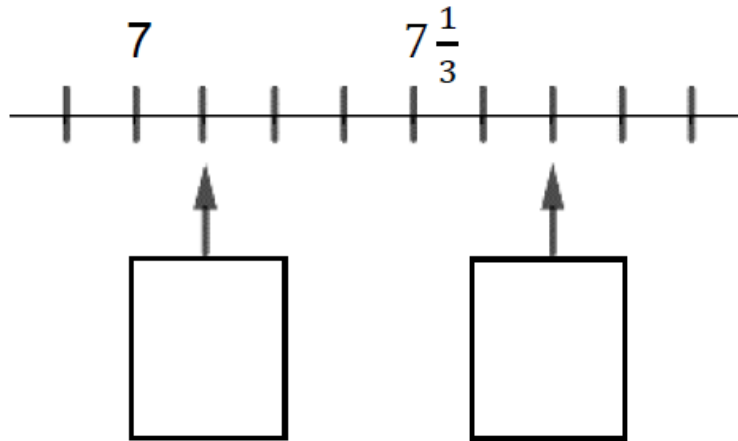
(V) $480 \div 64 = \dots\dots\dots$

(VI) $240 \div 32 = \dots\dots\dots$

(3 marks)

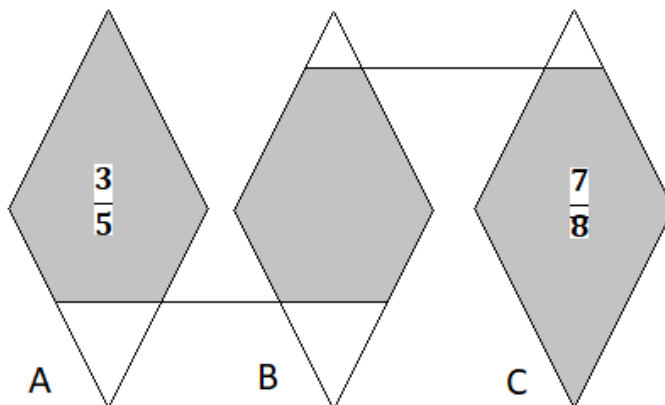


11. Using the number line, complete the boxes.



(2 marks)

12. Shapes A, B and C are equal. The $\frac{3}{5}$ of shape A are shaded. The $\frac{7}{8}$ of shape C are shaded. What part of shape B is shaded? Show all your working.



(3 marks)



SECTION B: PROBLEMS

1. Christina's family bought a washing mashing. They paid 25 monthly instalments. Her father gave €20 per month from his salary, and her mother gave €15. How much did the washing mashing cost?



Answer:
(2 marks)

2. (a) Chris' salary is €1400 per month. He pays 20% for his rent.
How much is his rent per month?

Answer:.....
(1 mark)

- (b) Maria's salary is €1520 per month. She pays $\frac{1}{4}$ of it for her rent.
How much is the difference between Chris and Maria's rent?

Answer:.....
(2 marks)



3. A bookcase has 3 sections that are placed next to each other on the wall.
The first piece has length $\frac{3}{4}$ m, the second has length $1\frac{2}{5}$ m and the third has length 0.7 m.
Can we place the bookcase on a wall that has length 3 m?

Answer:.....
(2 marks)

4. Riana wants to rent a car.
The Rental cost is:



For the first day	€23
For every additional day	€15

- (a) How much will Riana pay if she rents the car for a week?

Answer:.....
(2 marks)

- (b) In the end, Riana paid €158. For how many days did she rent the car for?

Answer:.....
(2 marks)



5. Stelios left Larnaca Airport at 5:45 a.m. to travel to New York, through London. His flight Larnaca – London lasts 4 hours and 50 minutes. In London, there is a 3 hour and 40 minutes wait until his next flight to New York. His flight London – New York lasts 7 hours and 55 minutes.

(a) What time will it be in Cyprus when Stelios arrives in New York?

Answer.....
(3 marks)

(b) If New York time is 7 hours behind compared to Cyprus time, what time will it be in New York when Stelios arrives there?

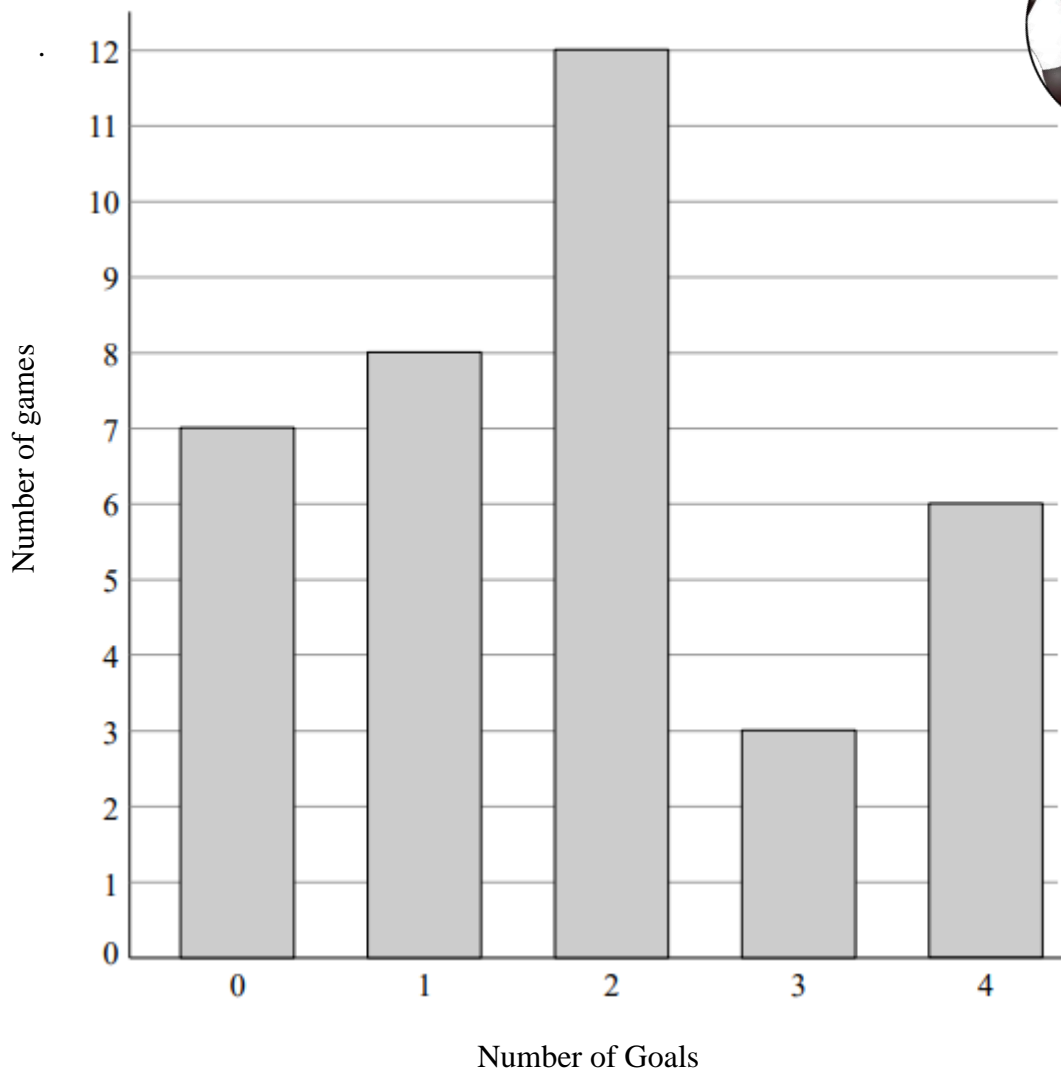
Answer.....
(1 mark)

6. Mr. Stefanos is selling laptops. He bought 15 laptops for €9000. He wants to sell them at a profit of $\frac{2}{5}$ of their cost. How much does he sell each laptop?

Answer: €.....
(3 marks)



7. The following bar chart displays the total number of goals scored by a football team during a football season.



(a) In how many games did the team score 3 or more goals?

(b) What is the most popular score during the season?

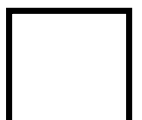
(c) What is the total number of games played during the season?

.....

.....

.....

(3 marks)



8. Mr. Vasos asked his students which means of transport do they prefer to use? The table below gives some information about his research.

<u>Means of transport</u>	<u>Percentage of Students</u>
Bus	10%
Train	
Airplane	20%
Ship	40%

(a) Complete the table.

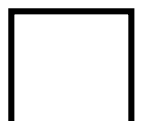
(b) If 3 students said they preferred to use to travel by bus, how many students in total are there in Mr. Vasos' class?

.....

(c) How many students said they preferred to travel by airplane or by ship?

.....

(3 marks)



9. The list of numbers below shows the ages of Mrs. Chrysanthi's grandchildren (in years).



6 18 12 14 15 22 11

Find the mean average of their age.

.....
(2 marks)

10. (a) The price of bicycle A is €160.
On Monday, it has a discount of 25%.
On Friday, there is a further discount of 10%.
What was the final selling price of the bicycle on Friday?

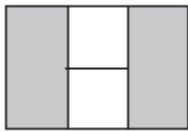
€.....
(2 marks)

(b) Bicycle B also costs €160.
There is a discount of 35% on its original price.
Which bicycle is cheaper after the discounts?
Show all your working to justify your answer.

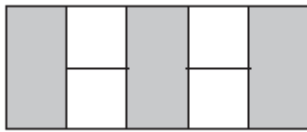
.....
(2 marks)



11. Elene drew the following sequence of patterns, which are made from white squares and grey rectangles.



Pattern 1



Pattern 2



Pattern 3

(a) In the space below draw pattern 4:

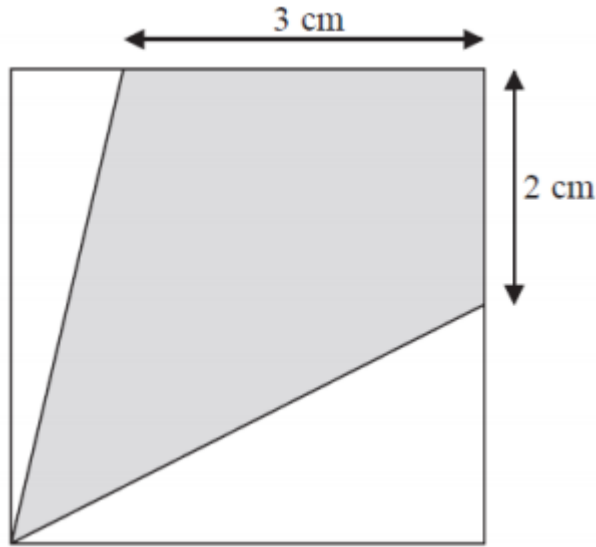
(b) Complete the table below:

Pattern	Number of white squares	Number of grey rectangles
1	2	2
2	4	3
3	6	4
6		
11		
	30	
		20

(5 marks)



12. The following shape shows a square with **perimeter** 16cm.



(a) Find the area of the square

.....cm²
(2 marks)

(b) Find the shaded area

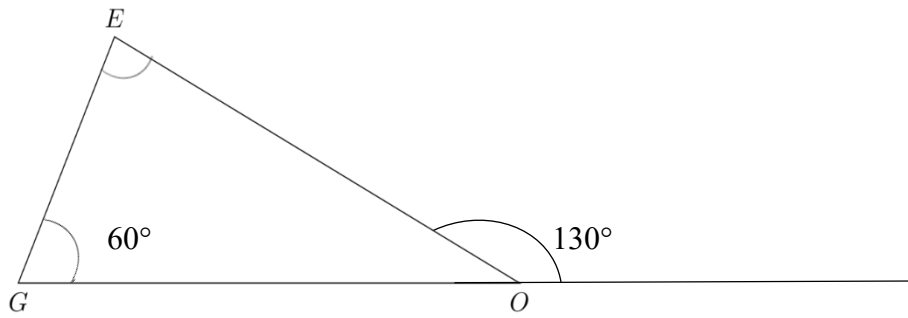
..... cm²
(3 marks)

(c) Find the ratio of the **shaded area to the area of the square** in the simplest form.

.....
(1 mark)



13. Find angle \hat{E} .



$\hat{E} = \dots\dots\dots$
(2 marks)

14.

a) A bakery uses 12kg of sugar to make 50kg of sponge cake. How many kilograms of sponge cake will it bake with 42kg of sugar?

$\dots\dots\dots$
(2 marks)

b) Sugar is sold in 20kg bags.
The bakery has to bake 200kg of sponge cake for a wedding
How many bags of sugar will it need?

$\dots\dots\dots$
(2 marks)



15. Margaret is going to buy 150 envelopes.
Below is some information about the cost of envelopes in 2 shops.

Shop A

Pack of 25 envelopes for €3.49

Shop B

Pack of 10 envelopes for €2.10

Offer

Buy 2 packs Get 1 pack free

Margaret wants to buy the envelopes as cheaply as possible.
Which shop should Margaret buy the 150 envelopes from?
You must show your working.

.....
(3 marks)



THE END.