THE G C SCHOOL OF CAREERS

<u>ENTRANCE EXAMINATION</u>

SCHOOL YEAR 2013-2014

<u>MATHEMATICS</u>

(This examination paper consists of 18 pages including this page)

THE G C SCHOOL OF CAREERS

ENTRANCE EXAMINATION

SCHOOL YEAR 2013-2014

GOOD LUCK

Time: 1 hour and 30 minutes

MATHEMATICS

- This paper consists of **25 questions**.

- Answer **ALL** the questions in the spaces provided.

- You must **show all your working**.

- Your answers must be clearly and neatly presented.

- The use of calculator is not permitted.

1. Find the missing numbers:

52, 57, 54, 59, _____ , 61, _____

(2 marks)

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2. A school starts lessons at $8\frac{1}{4}$ am and finishes at $13\frac{1}{2}$ pm.

If the breaks last $\frac{11}{12}$ hours, find how much time the lessons last?
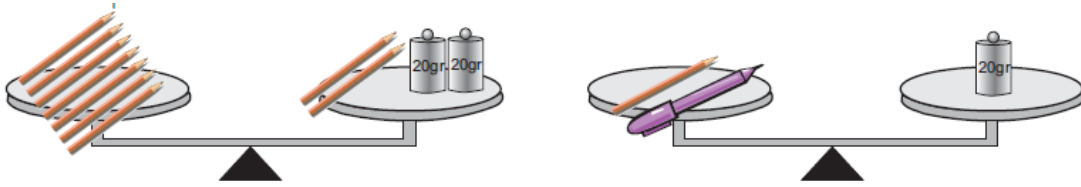
(3 marks)

Answer: _____

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3. Double a number and subtract 12 from it. The answer is 60.
Find the original number.

(3 marks)

Answer: _____

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4. On the diagram below, the two balances balance each other.
On the balances there are some pencils and one pen.
How many grams does the pen weigh?

(3 marks)

Answer: The pen weighs _____ grams.

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5. Demetris has a goldfish and a dog. He has to feed the goldfish every 8 hours and the dog every 12 hours. Right now he is feeding both, the dog and the goldfish. Find how many hours later he will feed the dog and the goldfish together again?

(2 marks)

Answer: _____

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6. Find the value of the following:

(a) $\left(12 \div \dfrac{1}{2} - 0.5\right) \times \left(4 + 2\dfrac{1}{4}\right) \div 5 =$

(4 marks)

Answer: _____

(b) $\dfrac{3\dfrac{5}{6} - 1\dfrac{1}{3}}{5 + \dfrac{1}{2} \times \dfrac{5}{3}} =$

(4 marks)

Answer: _____

7. A box contains 14 chocolates: 8 are in the form of a snail and the rest are in the form of a turtle. Seven are dark chocolates and the rest are white chocolates. There are exactly 2 turtles that are not dark. Find how many white snails there are in the box.

(2 marks)

Answer: _____

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8. Nikos gives half of his stamps to his friend George.
George gives to Pavlos half of the stamps that Nikos gave him.
Pavlos keeps 5 stamps for himself and he gives the last 9 to Andreas.
Find how many stamps Nikos has.

(3 marks)

Answer: _____

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9. Sixty (60) birds were sitting on 3 trees. At some point, 6 birds flew away from the first tree, 8 birds from the second and 4 birds from the third. After this, the number of birds on each tree was the same. Find how many birds were on the second tree at the beginning.

(4 marks)

Answer: _____

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10. The shape below is made up of 9 equal squares.
Given that the area of the whole shape is 144 cm^2, find the perimeter of the shape.
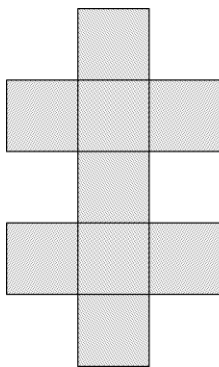
(4 marks)

Answer: _____

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11. Maria and Niki have a lot of books in their study.
Maria has read 75% of these books and Niki has read 90% of these.
If Niki has read 6 more books than her sister Maria, find the total number of books they have in their study.
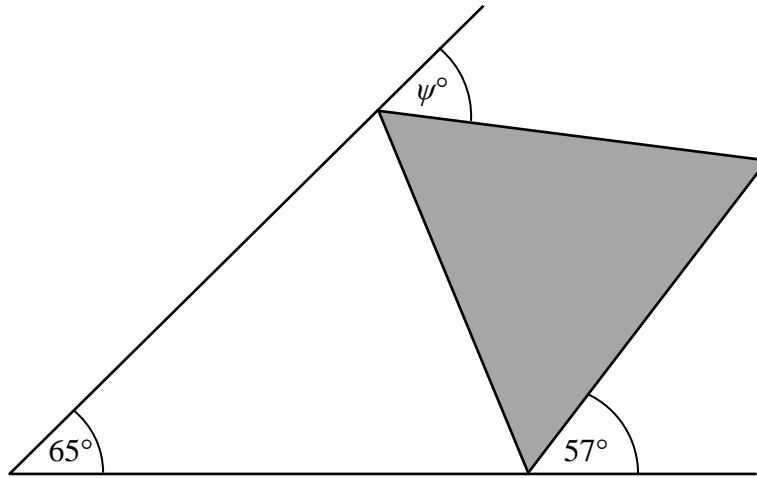
(3 marks)

Answer: _____

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12. The children are collecting cards. Depending on its colour, each card has a different value. Each red card can be exchanged with two yellow cards. Each blue card can be exchanged with one green and three red cards. Each green card can be exchanged with two red and two yellow cards. Find how many green cards we could get by exchanging one blue card.

(4 marks)

Απάντηση: _____

13. The shaded triangle in the diagram below is an **<u>equilateral</u>** triangle:

(Diagram not drawn to scale)

(4 marks)

Calculate the size of the missing angle ψ.

Answer: _____

14. Anna printed 135 pages on her printer. Find how many digits were printed for the numbering of the printed pages from page 1 to page 135.

(4 marks)

Answer: _____

_____

15. A driver travels with a constant speed 60 km per hour for 8 hours to cover a distance. If he increases his speed by 25%, find how many minutes he will need in order to cover the same distance.

(5 marks)

Answer: _____

_____

16. The product of two numbers is 96. Find the two numbers given that their difference is 4.

(4 marks)

Answer: 1st number: _____

2nd number: _____

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17. Helen's mother dyes Easter eggs. After she dyes them, her mother gives the eggs to Helen to decorate them with stickers. Up to now she has given Helen 15 red eggs and 10 blue eggs. Every 10 minutes she gives Helen 2 red and 3 blue eggs. How long would it take until Helen has the same number of red and blue eggs?

(4 marks)

Answer: _____

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18. In a Mathematics test some students got the following marks:

17, 8, 19, 13, 11, 20, 14, 18

(a) Find how many students got a mark above average.

(4 marks)

Answer: _____

(b) Marios got 8 in the test. Find how much he should have gotten in order for these students' average to become 16.

(3 marks)

Answer: _____

_____

19. The number of legs of all desks in a class is equal to the number of legs of all the students in the class. If you know that there are 15 desks in the class,

(a) find how many desks and students there are altogether in the class.

(3 marks)

Answer: a) _____

(b) If we have two students sitting at each desk, is there a chance for a student to be left without a desk?

(1 mark)

Answer: b) _____

_____

20. For the school excursion, 23 students from Form 1 and 18 students from Form 2 paid € 2.25 each. Form 3 students paid € 2.50 each. If the total amount of money collected was € 144.75, find how many students there are in Form 3.

(4 marks)

Answer: _____

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21. The boys and girls from Maria and Nick's class want to stand in a line. There were 16 students standing on Maria's right hand side, and Nick was one of them. There were 14 students standing on Nick's left hand side, and Maria was one of them. There were 7 students standing between Maria and Nick. Find the total number of students in the class.

(3 marks)

Answer: _____

22. Mr Christos makes 8000 sweets per week. It costs him €0.15 for the making of each sweet and he also pays Mrs Niki, his assistant, €300 per week. Find his profit per week if he sells each sweet at the price of €0.25.

(4 marks)

Answer: _____

23. In a general knowledge competition, Stefanos, Nick, Anastasia and Christina got the first four places.

Read the following information and find the place of each child in the competition.

- Anastasia said that if she had studied more she could have managed a better place.

- Nick got a lower place than Christina but a better place than Stefanos.

- Anastasia did not get the second place.

- Stefanos did not take the third place.

(4 marks)

Answer: 1st place: _____
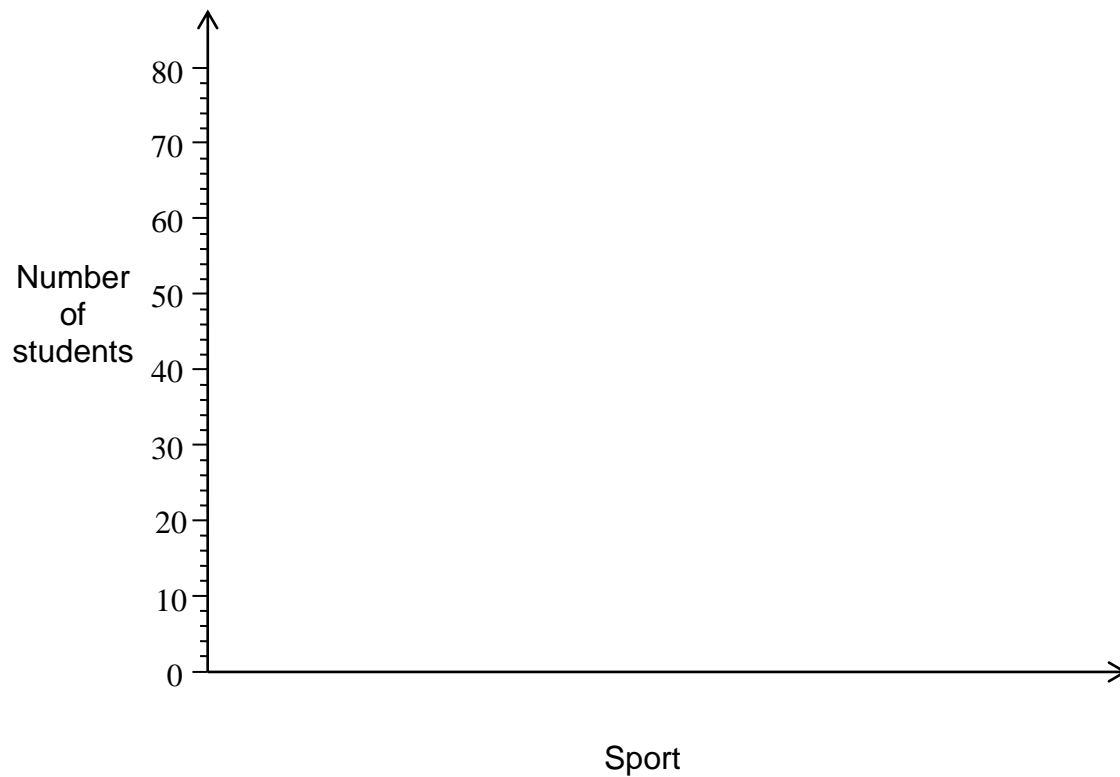
2nd place: _____

3rd place: _____

4th place: _____

24. Students in a school were asked which sport they prefer. The results are shown in table below.

Sport	Football	Basketball	Volleyball	Tennis
Number of students	50	65	72	38

(a) Illustrate the results in a bar chart.
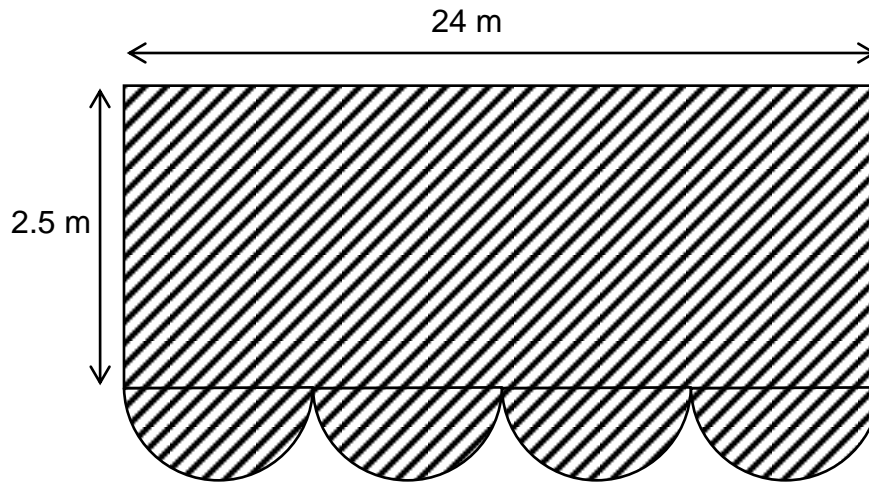
(4 marks)

(b) Find the percentage of students that prefer Volleyball.

(3 marks)

Answer: _____

_____

25. A shop keeper wants to make a shed for his shop as shown in the diagram below. Find how many square metres he will need for the shed. Use π = 3.14.

(5 marks)

24 m

2.5 m

(Diagram not drawn to scale)

Answer: _____

END