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Name _____
Father's Name _____



THE G C SCHOOL OF CAREERS

ENTRANCE EXAMINATION

SCHOOL YEAR 2014-2015

MATHEMATICS

(This examination paper consists of 20 pages, including this page).

THE G C SCHOOL OF CAREERS



ENTRANCE EXAMINATION

SCHOOL YEAR 2014-2015

GOOD LUCK

Time: 1 hour and 30 minutes

MATHEMATICS

- This paper consists of **25 questions**.
- Answer **ALL** the questions in the space provided.
- Show **all your workings**.
- The use of a calculator is **not allowed**.
- Write your answers **clearly**.

1. Anna bought a box of cakes. In it there were 2 more chocolate cakes than carrot cakes. If there were 16 cakes in total, find how many carrot cakes she bought.

(2 marks)

Answer: _____

2. Write True or False for the following:

(5 marks)

- The number 460 is divisible by 3. _____
 - When a number ending in 0 is divided by 5 it leaves a remainder of zero. _____
 - Even numbers are divisible by 4. _____
 - When you halve any number ending in 8, the answer will always end in 4. _____
 - The number 2 is the only even number that is a prime number. _____
-

3. George spent $\frac{4}{5}$ of the money he had, whilst Chris spent $\frac{1}{2}$ of the money he had. Both of them now have the same amount of money. If Chris now has €35, find how much money George had.

(2 marks)

Answer: _____

-
4. The distance of the journey from Maria's house to school is 2000 metres. The distance of the journey from her house to the gym is 80% of the distance of the journey from her house to school. If for every 200 metres she needs 3 minutes walking time, find how many minutes she needs to get from her house to the gym.

(3 marks)

Answer: _____

5. Calculate the following:

a) $\frac{1}{5} + \frac{2}{10} + \frac{3}{15} + \frac{4}{20} + \frac{5}{25} =$

(2 marks)

Answer: _____

b) $8 \times \left(\frac{3}{5} + 0.6 \right) - \left(4\frac{1}{3} - 2\frac{2}{6} \right) \div 2 =$

(5 marks)

Answer: _____

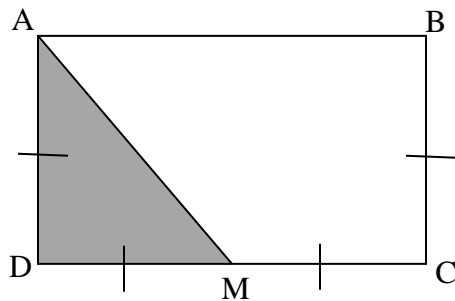
6. 30% of the beads that Marina has are red. The rest of them are blue. Given that there are 500 more blue beads than red beads, find how many beads Marina has in total.

(3 marks)

Answer: _____

7. The length of the following rectangle is twice the width and M is the midpoint of the side CD. If the area of the shaded region is 72cm^2 , find how many cm^2 the area of the whole rectangle is.

(3 marks)



(Diagram not accurately drawn)

Answer: _____

8. Calculate the following:

$$A = \frac{2014 + 2014 + 2014 + 2014 + 2014}{2014 + 2014}$$

(2 marks)

Answer: _____

9. In a box of cards, $\frac{2}{5}$ of the cards are blue, $\frac{1}{3}$ are red and the rest are green and yellow. The total number of red, green and yellow cards is 126. Find how many green and yellow cards there are collectively in the box.

(4 marks)

Answer: _____

10. The following table shows the journeys that a taxi driver makes in a day.

| Journey | Departure Time | Number of Passengers | Distance | Cost € |
|---------|----------------|----------------------|----------|--------|
| 1 | 9:25 a.m. | 2 | 8km | 7.50 |
| 2 | 9:52 a.m. | 1 | 12km | 9.90 |
| 3 | 10:32 a.m. | 3 | 7km | 7.60 |
| 4 | 11:05 a.m. | 1 | 21km | 15.50 |
| 5 | 12:15 p.m. | 4 | 15km | 12.60 |

- a) For journey number 5, the passengers shared the cost. Find how much each of them paid.

(2 marks)

Answer: _____

- b) Find how many passengers had a journey of more than 10km.

(1 mark)

Answer: _____

- c) If approximately 40 minutes are needed for a 12km journey, find what time it was when the taxi driver completed all of his journeys.

(3 marks)

Answer: _____

11. Peter and Paul have the same amount of money. Every day Peter spends €36 and Paul spends €48. On the day that Paul used up all of his money, Peter still had €240 left. Find how much money they had to begin with.

(4 marks)

Answer: _____

12. In the Cyprus national tennis tournament, the G C School tennis team will participate with eight athletes that have an average height of 178 cm. The team coach decided to add one more athlete to the team. This athlete's height is 187 cm. Find the new average height of the athletes in the team.

(3 marks)

Answer: _____

13. Helen and Katerina are two typists who are looking for a job. Helen writes around 275 words on her computer in 5 minutes, while Katerina writes around 430 words in 9 minutes. During a job interview at an office, the manager gave each of the girls a 500 word document to type on the computer. They had 10 minutes to complete the task. Will both girls manage to type the document before their time is up, or will only one of them manage to finish, and if so, which one?

(3 marks)

Answer: _____

14. Katerina, Christina, John and Costas each have €2.50. They went to the school canteen and bought some treats.

- Katerina bought two packets of chewing gum and one lollypop and paid €1.25.
- Costas bought one lollypop, one chocolate bar and one packet of chewing gum and did not get any change.
- John bought three lollypops and got €0.55 change.
- Christina bought one packet of chewing gum and one chocolate bar.

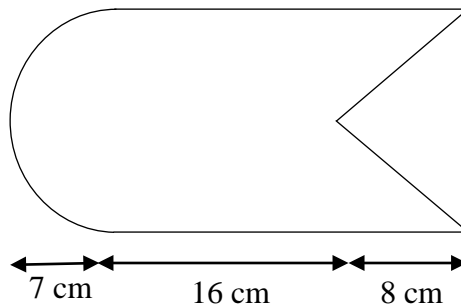
Find how much money Christina spent.

(5 marks)

Answer: _____

15. Find the area of the following shape. Use $\pi = 3.14$.

(5 marks)



(Diagram not accurately drawn)

Answer: _____

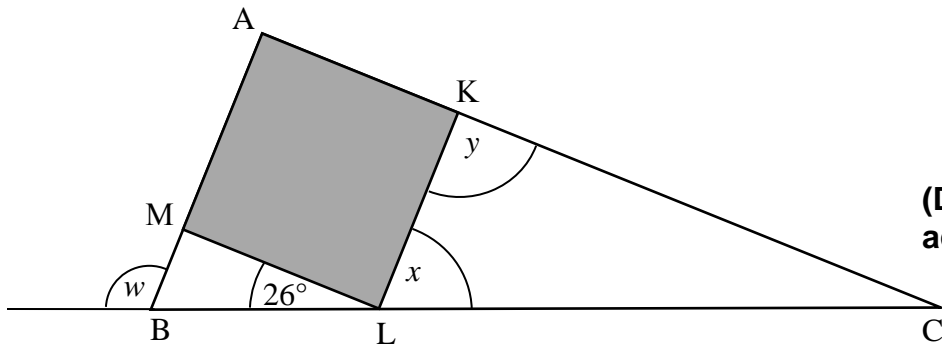
16. There are some cats and dogs staying at a pet hotel for small animals. If there were 5 more cats, there would be the same number of cats and dogs staying at the hotel. If there were 5 fewer cats, the dogs would be double the number of cats. Find how many dogs and how many cats there are.

(3 marks)

Answer: _____

17. In the diagram below AKLM is a square. Given that the angle $MLB = 26^\circ$, calculate the unknown angles.

(4 marks)



(Diagram not accurately drawn)

Answer: x _____

y _____

w _____

18. Costas and Stella invested money in a company in the ratio 3 : 2. If 5% of the total profit was given to charity and Costas' share of the money was €855, find how much the total profit was.

(4 marks)

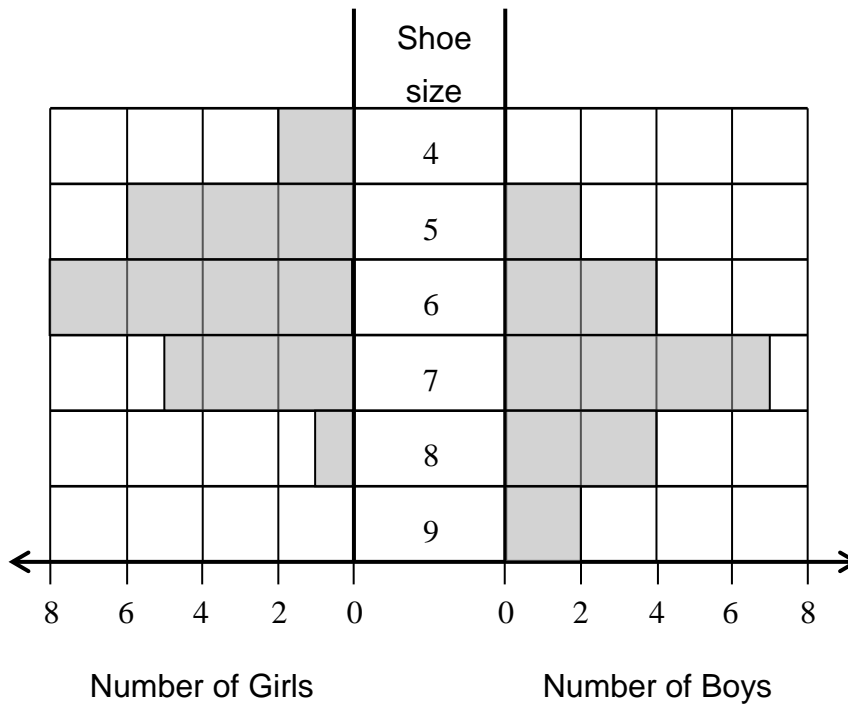
Answer: _____

19. A railway line, 167 km in length, begins at station A and ends at station B. In between the start and end points of the railway line there are two other stations, C and D. Station C is 110 km away from the start point, whilst station D is 104 km away from the end point. Draw a diagram and find how far apart stations C and D are.

(3 marks)

Answer: _____

20. Nikos carried out a survey. He asked some students what size shoes they wear. The diagram below shows the results of his survey.



a) Find how many students wear size 6 shoes.

(1 mark)

Answer: _____

b) Find how many more girls than boys were surveyed.

(2 marks)

Answer: _____

If a student is chosen at random, find

i) the probability that the student chosen is a girl who wears size 4 shoes.

(1 mark)

Answer: _____

ii) the probability that the student chosen does not wear size 6 shoes.

(1 mark)

Answer: _____

d) Find the percentage of students that wear size 7 shoes.

Give your answer to the nearest whole number.

(2 marks)

Answer: _____

21. Antony thought of an integer number. Vaso multiplied the number by 5 or by 6. John added 5 or 6 to Vaso's result. Danae subtracted 5 from John's result, and found an answer of 73. Find the number that Antony thought of.

(4 marks)

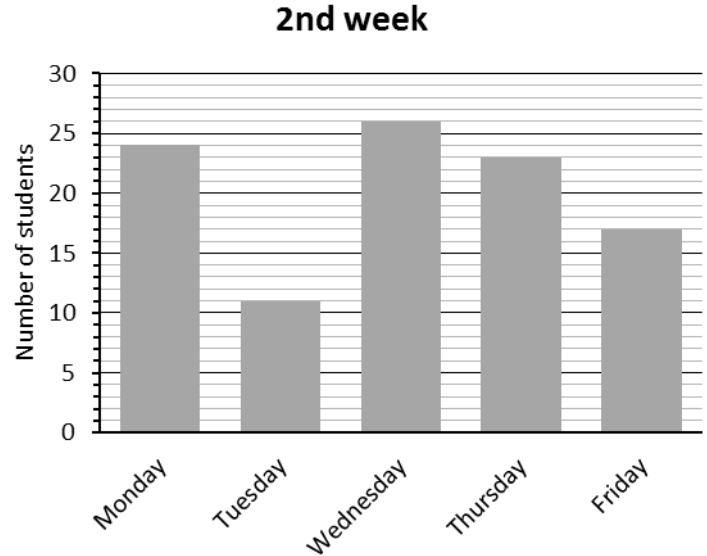
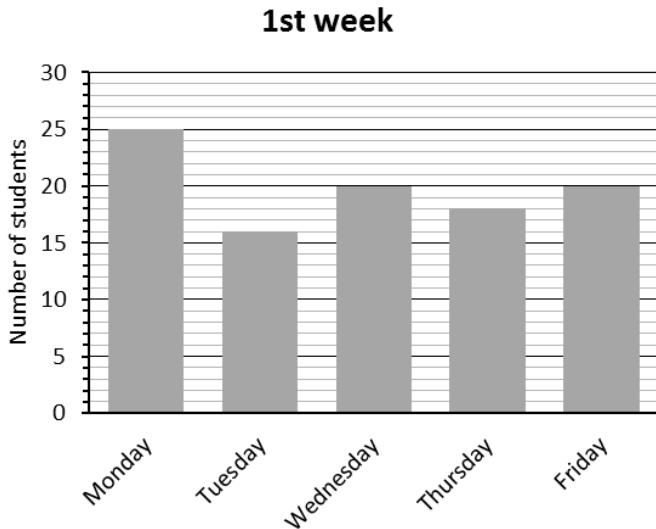
Answer: _____

22. Nefelie and her parents visited Limassol Zoo. They need 2 hours and 45 minutes to make their way around the whole Zoo. The whole family stopped for 8 minutes to feed the fish, for 6 minutes to take photos of the monkeys and for 40 minutes to rest and eat. The entrance time shown on their tickets was 10:06 a.m. Nefelie has arranged to meet with her friend Maria outside the Zoo at 13:40 so they can play in the playground next to the Zoo. Showing all of your workings, find whether Nefelie will get to her play date on time or not. Show all your workings.

(4 marks)

Answer: _____

23. The following bar charts show the number of students that took part in a two week contest held by the Mathematics Club.



a) Which day in total over the 2 week period had the largest number of participants?

(1 mark)

Answer: _____

b) Find the percentage of students who preferred to go to the Club on Wednesday.

(3 marks)

Answer: _____

24. Yesterday the supermarket had a special offer on 100g chocolate bars in packets of 3 with a saving of 36 cents per packet for the customer, and on 75g chocolate bars in packets of 5 with a saving of 45 cents per packet for the customer. I bought 10 packets in total, containing 36 chocolate bars. Find:

a) the number of packets I bought of each kind of chocolate bar.

(2 marks)

Answer: _____

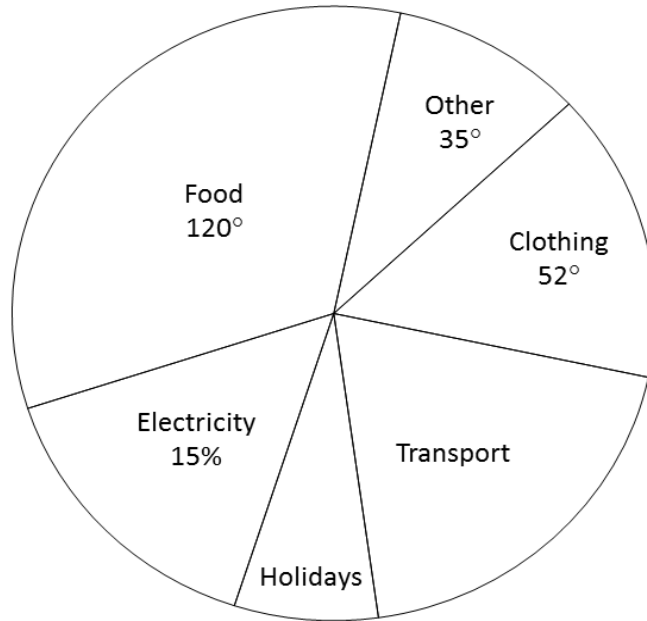
b) How much money I saved.

(2 marks)

Answer: _____

25. The pie chart below shows the household expenditure of a family. The family spends €1500 per month on food.

(6 marks)



(Diagram not accurately drawn)

Find:

a) The monthly income of the family.

Answer: _____

b) The amount of money they spend on clothing.

Answer: _____

c) How many degrees the angle showing the family's spending on electricity should be.

Answer: _____

END