

Number _____

Surname _____

Name _____

Father's name _____



THE G C SCHOOL OF CAREERS

ENTRANCE EXAMINATION

SCHOOL YEAR 2015-2016

MATHEMATICS

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

THE G C SCHOOL OF CAREERS



ENTRANCE EXAMINATION

SCHOOL YEAR 2015-2016

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. Fill in the missing numbers.

(4 marks)

600, 120, 30, 10, _____, _____

220, 175, 132, 91, _____, _____

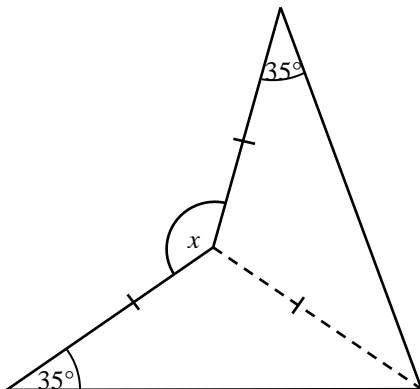
2. If today is 3 days before Tuesday and if tomorrow is 5 days before my birthday, find what day my birthday is on.

(2 marks)

Answer: _____

3. Find the value of the missing angle.

(3 marks)



Answer: x _____

4. Peter's father is 1.83 metres tall. Wanting to measure his own height, Peter stood on a stool that was $\frac{1}{3}$ of his father's height. When Peter's sister asked him how tall he was, he answered:

"Now that I am standing on the stool, I am 13 centrimetres taller than our father."

Calculate Peter's height.

(4 marks)

Answer: _____

5. On day 1, a worker finished $\frac{7}{12}$ of a project and on day 2 he finished the rest of it. If on day 2 he got paid €40 less than what he got on day 1, calculate his earnings for the entire project.

(4 marks)

Answer: _____

6. Manolis wants to buy his sister a book for her name day. He thought he would buy the book, wrap it up and put it into a bag to make it look more attractive. If 15 books cost €77.25, €15.60 of wrapping paper is needed for 10 books, and 5 bags cost €3.75, find how much the gift will cost him.

(4 marks)

Answer: _____

7. After a game, Chris collected twice as many balls as George and five more balls than Maria. In total, they collected 35 balls. Find how many balls Chris collected.

(4 marks)

Answer: _____

8. In a Mathematics competition the prize of €600 for the 3 winners in the 1st, 2nd and 3rd position distributed in the ratio 3:2:1 respectively. If Nicolas and Maria were both equally awarded the money prize for the 3rd position, what is the amount that Maria received?

(3 marks)

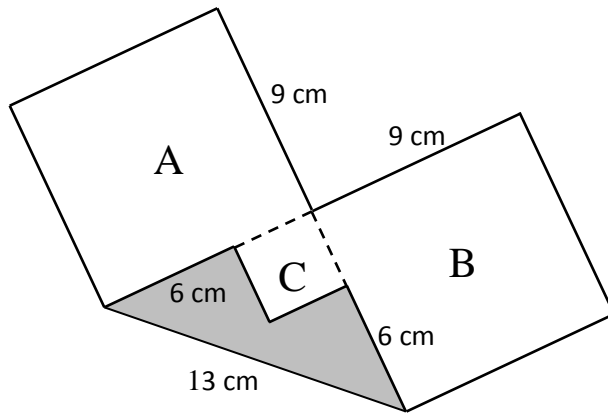
Answer: _____

9. At a bookshop, four notebooks cost as much as 25 erasers. Five erasers cost 160 cents. Find how many dozens of notebooks can be bought with €72.

(3 marks)

Answer: _____

10. In the shape below A, B and C are squares. If the area of square C is 9cm^2 , find:



(Diagram not accurately drawn)

a) the perimeter of the unshaded part of the shape.

(3 marks)

Answer: a) _____

b) the area of the shaded part of the shape.

(3 marks)

Answer: b) _____

11. Maria together with her siblings Demetra, Stavros and Nikos attend Primary School. Find which class each of them is in if:

(4 marks)

- Demetra is the eldest child of the family
- Stavros is the youngest amongst the boys
- The boys are in consecutive classes
- Neither of the boys is in a consecutive class with either of the girls
- No child is in Grade 2

Answer: _____

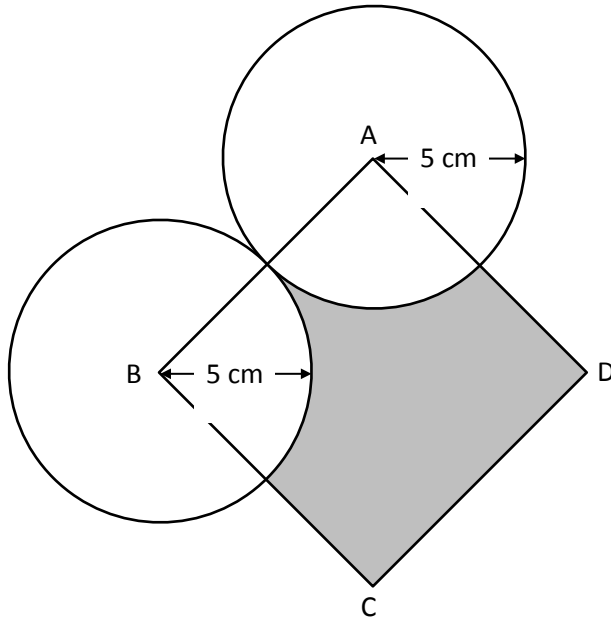
12. The diagram below shows 2 circles and a square ABCD.

A and B are the centres of the circles and the radius of each circle is 5cm.

Calculate the area of the shaded part of the shape.

Use $\pi = 3.14$.

(4 marks)



Answer: _____

- 13.** Three nurses work night shifts in a hospital, scheduled as follows:
Marina works every 2 days, Nicki works every 3 days and Helen works every 4 days. On Saturday, 14th March, they all have a night shift together and want to know on which Saturday they will be working together again.
Try to help them. Give a specific date.

(5 marks)

Answer: _____

14. The table below shows if the students of a class go to school on foot or not.

	Go to school on foot	Go to school by other means of	Total
Boys	2	8	10
Girls	5	10	15
Total	7	18	25

Find:

a) The percentage of boys that go to school on foot.

(2 marks)

Answer: a) _____

b) The percentage of students in the class that go to school on foot.

(2 marks)

Answer: b) _____

15. Nick had a bag containing the following balls.



He then added more black balls into the bag. Now, if he takes one at random, the probability that the ball he takes is black is $\frac{2}{3}$. Find how many more black balls did Nick put into the bag.

(4 marks)

Answer: _____

-
16. In the 5-digit number 45CBA the ones, tens and hundreds digits are A, B and C respectively. The number is divided evenly by both 2 and 3. If the tens' digit is double the hundreds' digit, and the sum of all the digits is 24, find the values of A, B and C.

(3 marks)

Answer: A = _____, B = _____, C = _____

17. On a given day, 140 children attend the local kindergarten.
One litre of milk is needed for every 4 children during breakfast. If the cost for 200 bottles of milk, whereby 4 bottles contain 3 litres, is €165, how much does the milk cost on the given day?

(5 marks)

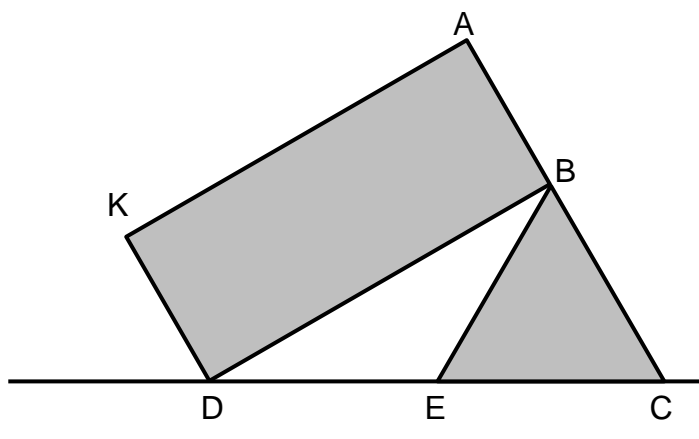
Answer: _____

18. In the diagram below the shaded shapes are a rectangle and an equilateral triangle. ABC is a straight line.

- a) Find all the angles of the triangle BDE.
- b) What type of a triangle is BDE?

(4 marks)

(Diagram not accurately drawn)



Answers: a) _____

b) _____

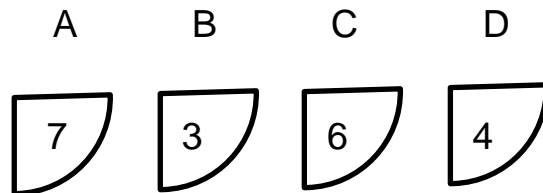
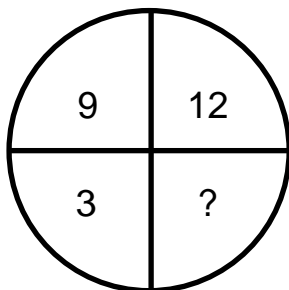
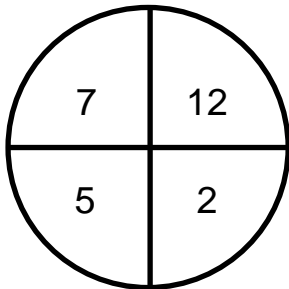
19. At a supermarket, cartons of juice are sold in 4-packs or 6-packs. This morning, the supplier brought 210 cartons of juice in 40 packs in total. Find how many 4-packs the supplier brought.

(4 marks)

Answer: _____

20. Find the missing part choosing one of the possible answers below.

(2 marks)



Answer: _____

21. 96 people (men, women and children) attended a play at the local theatre. Given that 64 people were men and women, and 65 people were women and children, calculate how many men, women and children attended the show.

(4 marks)

Answer: Women _____

Men _____

Children _____

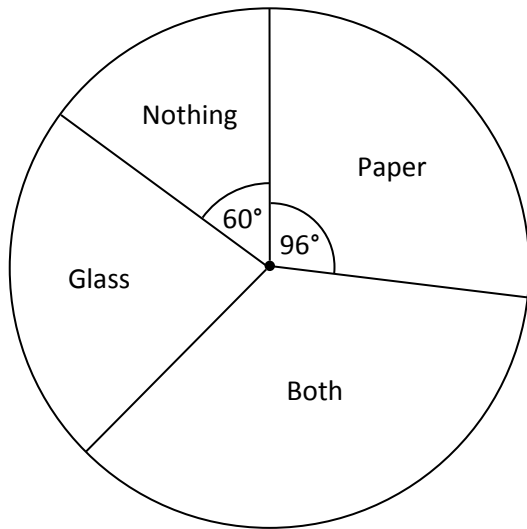
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22. An elementary school has a total of 400 children. 70% of the children play tennis. 50% of the girls do not play tennis and 200 of the boys play tennis. Find the total number of boys attending the elementary school.

(4 marks)

Answer: _____

23. The pie chart given below shows the results of a research on recycled paper and glass. On the side you are given a table with information. Use all the given information to complete the table.

(5 marks)



Recycling	Number of children	Angle
Paper		96°
Glass	7	
Both		
Nothing	5	60°
Total	30	

- 24.** At the local baker's they bake various pastries. 45% of the pastries baked are cheese pies, 25% are sausage rolls, 10% apple pies and the remaining 40 are croissants.

Calculate:

- a) How many are all the pastries baked at the baker's?

(3 marks)

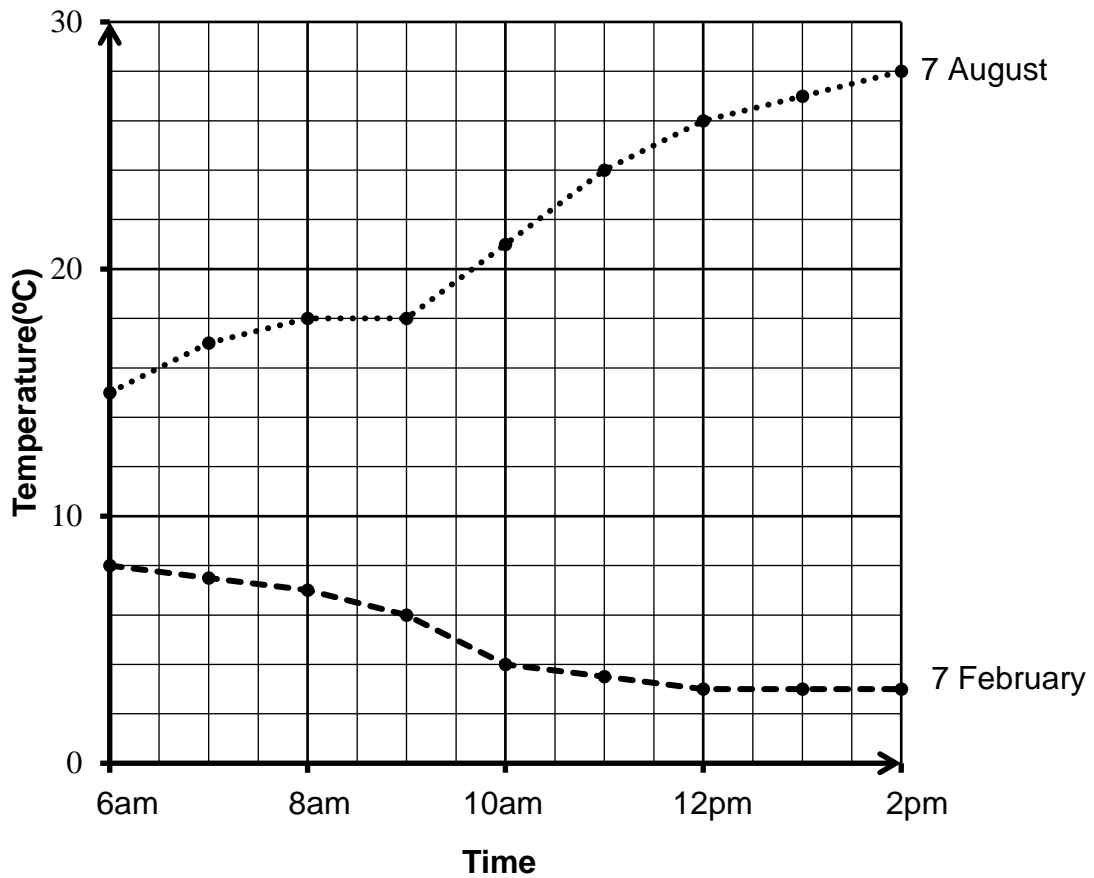
Answer: a) _____

- b) How many are the cheese pies baked?

(2 marks)

Answer: b) _____

25. The following chart shows the temperature of a city between 6 am and 2 pm from February 7th until August 7th of one year.



- a) What is the difference in temperature at 12 pm between the two given dates?

(1 mark)

Answer: a) _____

- b) Estimate, by being as accurate as you can, the time at which the temperature on August 7th will be 20° C.

(2 marks)

Answer: b) _____

c) On February 7th, between 6 am and 2 pm the temperature, as it can be seen on the graph, decreases. How many degrees ($^{\circ}C$), has the temperature decreased?

(1 mark)

Answer: c) _____

d) Find the average temperature at 9 am between the two days.

(2 marks)

Answer: d) _____

END