

THE G C SCHOOL OF CAREERS



ENTRANCE EXAMINATION

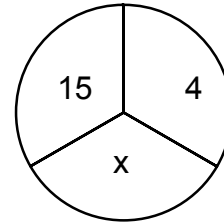
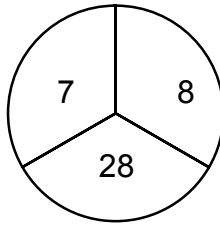
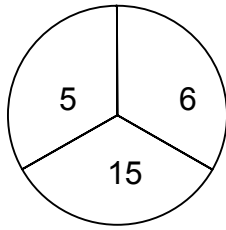
SPECIMEN PAPER 3

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.

1. Find the relationship among the numbers and fill in the value of x. (2 marks)



Answer: $x = \dots\dots\dots$

2. Five basketball teams participate in a champions' league. Every team plays with all the other teams once. How many games will take place in total?

(2 marks)

Answer: $\dots\dots\dots$

3. During sales, Barbara bought a coat and paid €10 less than half its original price. She saved €80. Find how much she paid for the coat.

(3 marks)

Answer: $\dots\dots\dots$

4. Find the sum of all the factors of 32.

(3 marks)

Answer:

5. Find the number $\frac{2}{5}$ of which decreased by 10, give the number 22.

(3 marks)

Answer:

6. Someone got a €100 pay-raise last year, a 20% raise this year and his salary now is €840. Find out what his salary was before last year's raise.

(3 marks)

Answer:

7. Nicos is looking for his friends to play football. All his friends live on the same side of the road where his house is located. First he goes 4 houses down the road to get Leonidas. Leonidas lives in the first house of that road. He then goes 6 houses up the road to get Marios and afterwards he goes 3 houses down the road to get Costas. Finally, he goes 13 houses up the road to get George. How many houses are located on the same side of the road where Nicos lives?

(3 marks)

Answer:

-
8. A square has a side of 6 cm. A triangle with a base of 12 cm has an area three times the area of the square. Find the height of the triangle.

(4 marks)

Answer:

9. A grocer bought 23 dozen eggs for 5 cents each. 16 of them broke though, and he sold the rest for 6 cents each. Did he make a loss or a profit and by how much?

(4 marks)

Answer:

10. Find the number:

(4 marks)

- It is a double digit number
- Its tens digit is divisible by 3
- Its ones digit is divisible by 4
- Its ones digit is larger than the tens digit
- The number is larger than 40

Answer:

11. Costas' parents bought a car that costs €5000. They paid $\frac{3}{5}$ of the price and agreed to pay the rest 10 months later with a 12% added tax. How much would their car cost eventually?

(4 marks)

Answer:

12. The mean of ten numbers is 18. If you cancel out one number the mean of the remaining numbers is 16. Find which number is cancelled out.

(4 marks)

Answer:

13. Nicos, Marios, Constantinos, George, Mark, Anna, Maria, Christina, Pavlina and Elena are 5 married couples.

- Marios is not married to Anna.
- Nicos is married to neither Elena nor Anna.
- Elena is neither married to Marios nor George.
- Nicos is not Pavlina's husband.
- Christina is George's wife.

(4 marks)

Find who Pavlina is married to.

Answer:

14. Evaluate the following:

(4 marks)

(a) $(4 + 2)^2 - 3^3 =$

(b) $6 \times (2^1 - 7^0) =$

Answers: (a)

(b)

15. Andrew bought a computer and gave $\frac{3}{8}$ of the cost upon the purchase. He will pay the rest in 12 installments of €100 each. How much will the computer eventually cost him?

(4 marks)

Answer:

16. 3 people bought some shares. A gave €300, B gave €200 and C gave €400. When they sold their shares, they had a profit of €1800. Find out how much profit each person made.

(4 marks)

Answers: profit A =

profit B =

profit Γ =

17. A shop owner sold his products and had a 7% loss. If he had sold them with a 5% profit he would have received €840. What **was** the value of his goods and how much did he sell them?

(4 marks)

Answer:

18. A watch is running 5 minutes fast every hour. If it is set at 12:00 at noon, what time will it be showing 13 hours later?

(4 marks)

Answer:

19. By using the word ILLITERATE, what is the probability:

(4 marks)

(a) of picking out letter L at random.

Answer: (a).....

(b) of picking out consonants at random.

Answer: (b).....

20. I had some sweets and distributed them among 3 children. I gave $\frac{1}{2}$ to A and $\frac{1}{2}$ of the rest to B and $\frac{1}{2}$ of the rest to C. If I had 3 sweets left, how many did I have initially?

(4 marks)

Answer:

21. A water container has the shape of a rectangular prism with dimensions 4.5m, 3.5m and 2m. Calculate the number of hours it takes to fill the water container from a tap that produces 30 litres of water every 5 minutes.

(5 marks)

Answer:

22. A book consists of 126 pages. Each page has 23 lines and each line has 8 words. We will republish the same book and each page of the new book will consist of 24 lines and each line will have 6 words. How many pages will the new book have?

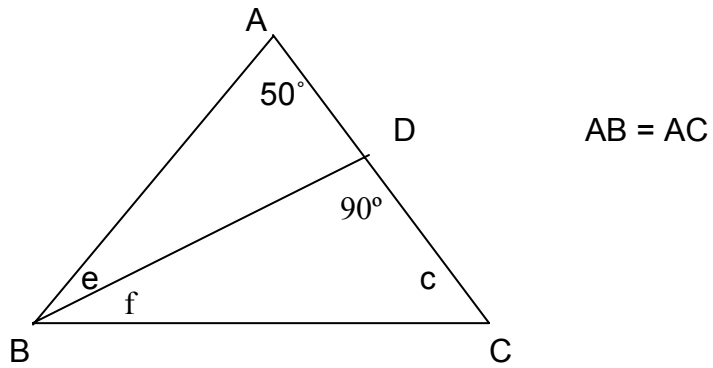
(5 marks)

Answer:

23. Find the angles marked with a letter:

(a)

(4 marks)



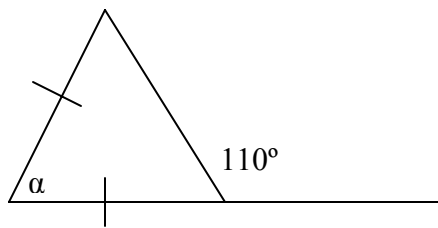
Answers: angle $c = \dots\dots\dots$

angle $e = \dots\dots\dots$

angle $f = \dots\dots\dots$

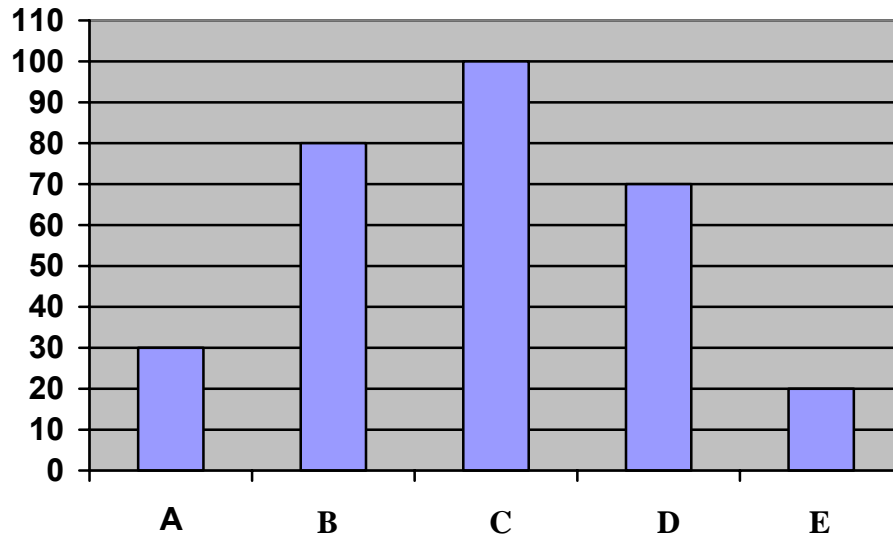
(b)

(3 marks)



Answer: angle $\alpha = \dots\dots\dots$

24. The bar chart below shows the distribution of grades in Mathematics, of a group of high school students.



(6 marks)

(a) How many students are there in total?

Answer: (a)

(b) How many students scored A?

Answer: (b)

(c) How many students scored below C?

Answer: (c)

(d) What fraction of the total number of students scored C?

Answer: (d)

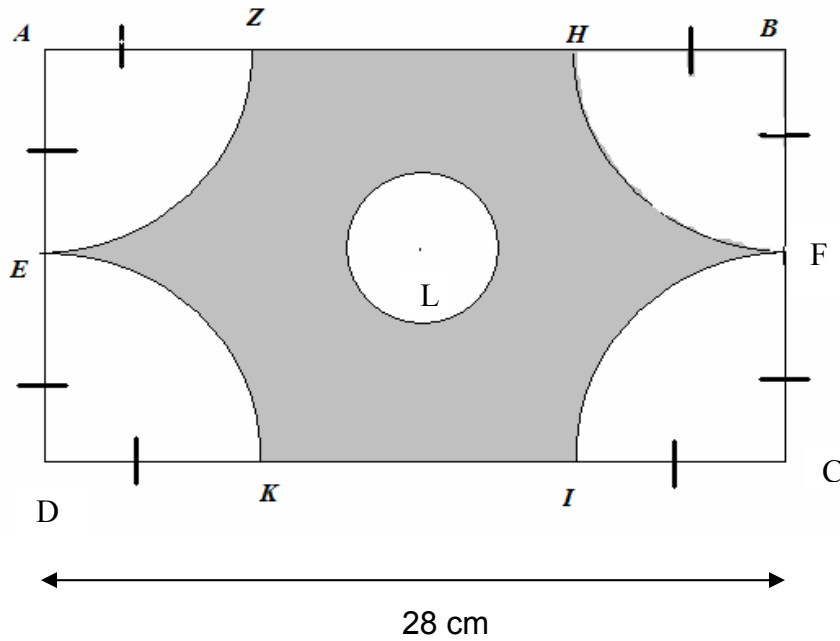
(e) Find the probability of selecting a student who scored C.

Answer: (e)

25. ABCD is a parallelogram such that
 $AZ = HB = B\theta = \theta C = CI = KD = DE = EA = 8$ cm
 $AB = 28$ cm and the radius of the circle L is 5 cm.

Find the area of the shaded region. ($\pi = 3.14$)

(6 marks)



Answer:

END