THE G C SCHOOL OF CAREERS

ENTRANCE EXAMINATION

SPECIMEN PAPER 2

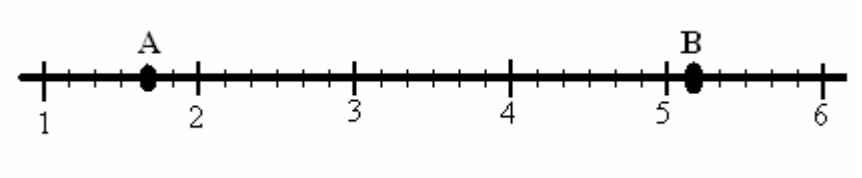
Time: 1 hour and 30 minutes

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. What is the length of AB? Give your answer as a mixed fraction.

(2 marks)



Answer: ……

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2. When you count from 1 to 100, how many times do you encounter number 7?

(3 marks)

Answer: ……

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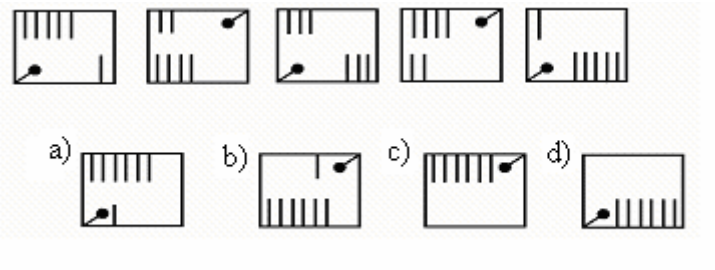
3. Identify and circle the diagram that fits the following sequence:

(3 marks)



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4. Maria and Nicos have 36 bars of chocolate each. How many bars should Maria give to Nicos in order for Nicos to have twice as many chocolate bars as Maria?

(3 marks)

Answer: ……

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5. Find the value of

$$0.17 \div \left(5\frac{1}{3} - 2\frac{1}{2} \right) =$$

(3 marks)

Answer: ……

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6. A rectangular box has these dimensions: **15 *m*, 30 *cm*, and *x m***. If the volume of the box is 36 m^3, what is the value of *x* ?

(3 marks)

Answer: ……

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7. In two years, my father's age will be exactly three times my age. My father is now thirty-seven years old. How old am I?

(3 marks)

Answer: ……

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8. Find the sum of all the prime numbers between 6 and 22.

(3 marks)

Answer: ……

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9. Compare the following fractions using $<, >, or =$.

(3 marks)

a) $\frac{3}{8}$ $\frac{1}{4}$

b) $\frac{1}{6}$ $\frac{1}{3}$

c) $\frac{28}{12}$ $2\frac{1}{3}$

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10. A car has covered a distance of $18\frac{3}{4}$ km in 25 minutes. Find the distance it will cover in an hour, travelling at the same speed.

(4 marks)

Answer: ……

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11. 128 players participated in a chess competition. The person defeated in each game will have to withdraw.

a) How many games will be needed to complete the competition?

b) How many games does the final winner have to win?

(4 marks)

Answers: a) ……

b) .....

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12. The perimeter of an equilateral triangle is 102 cm. Its height is $\frac{1}{4}$ the length of its side. What is the area of the triangle?

(4 marks)

Answer: ……

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13. I have set my VCR to automatically record a film that begins at 10:42 pm and finishes at 1:08 am. If I use a brand new three-hour-video tape, how long will the unrecorded section be?

(4 marks)

Answer: ……

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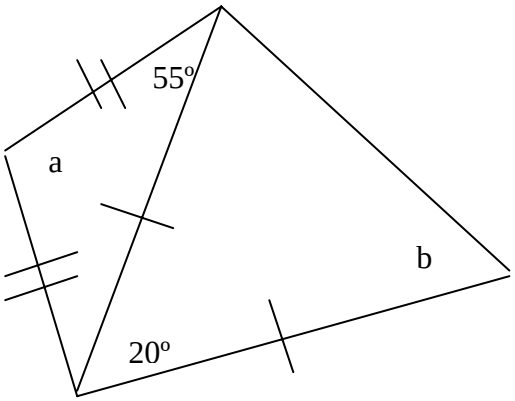
14. Find the unknown angles.



(4 marks)

Answers: angle a = ……

Angle b = ...

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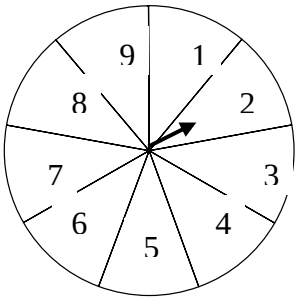
15. A bookshop owner bought notebooks that cost €10.80 per dozen. He sold 65 notebooks and received €68.25. How much profit did he make on each notebook?

(4 marks)

Answer: ……

16.



In the board game above, the circular chart rotates and when it stops the arrow points at the lucky number. Find the probability of:

(4 marks)

a) getting an odd number

b) getting a prime number

Answers: a) ……

b) .....

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17. Certain bacteria double in number every 5 minutes. At 1 p.m. a small number of these bacteria is placed in a jar. At 5 p.m. of the same day the jar is filled to the top with bacteria. Find the exact time when the jar was only a $\frac{1}{4}$ of its size full.

(4 marks)

Answer: ……

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18. I bought 3 watches and 5 cassette players and I paid €460. If I had bought 3 watches and 10 cassette players I would have paid €785. Find the price of a single watch and a single cassette player.

(4 marks)

Answer: Cassette player:……

Watch: ……...

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19. On a particular day, a florist sold 360 carnations, and 8 dozen more on the following day. How much money did he earn if he sold the carnations at €2.80 per dozen?

(4 marks)

Answer: ……

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20. Find the value of the following:

a) $2.4 \times 0.03 =$

(3 marks)

Answer: a) ……

b) $3\frac{3}{4} \div \frac{5}{8} =$

(3 marks)

Answer b)……

c) $25.5 + 6\frac{3}{5} =$

(3 marks)

Answer: c) ……

21. Andreas works 5 days per week and 8 hours per day. For every hour he works, he earns €6.50. If he works overtime, he gets paid $1\frac{1}{2}$ times his hourly salary. How much will he get this week if he has worked 10 hours overtime?

(4 marks)

Answer: ……

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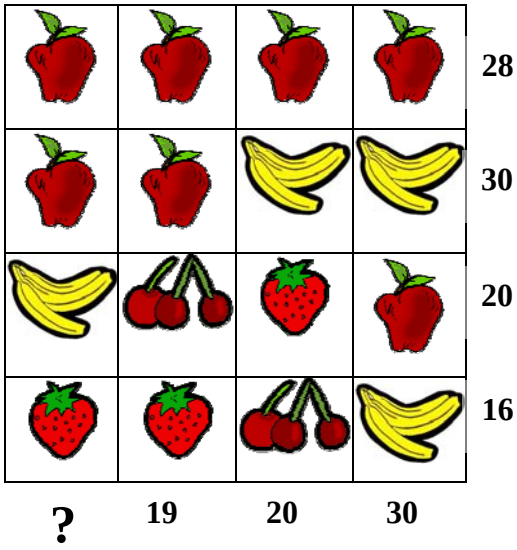
22. Study the diagram carefully. The numbers next to each row and under each column are the sum of the symbols in each row and column respectively. Which number should you write in place of the question mark? (4 marks)



Answer: ……

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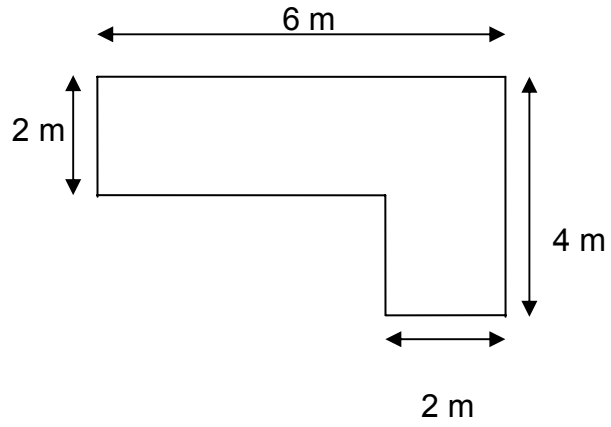
23. How many square tiles of **side 50cm** will be needed to cover the room floor shown in the diagram?

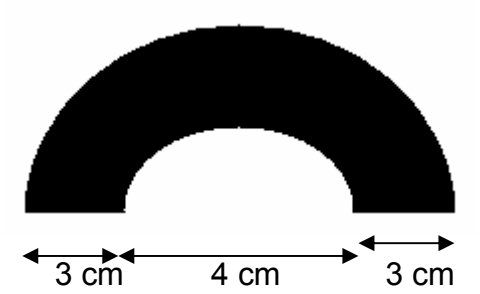
(5 marks)



Answer: ……

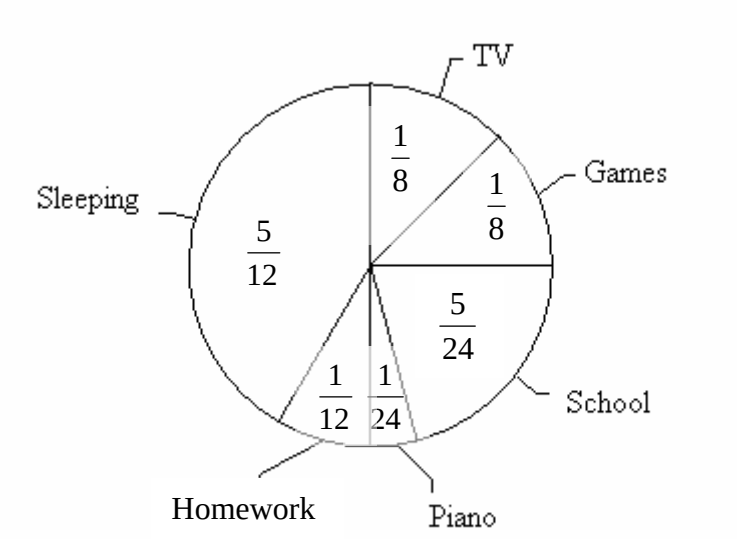
24. Find the area of the shaded region. (π = 3.14)

(6 marks)



Answer: ……

25.



The pie chart above shows the way a student spends his time in 24 hours.

(6 marks)

a) How many hours in total does he spend at school and doing homework?

Answer: a) ……

b) What percentage of the day does he spend watching TV and playing games?

Answer: b) ……

c) On which activity does he spend the least time?

Answer: c) ……

END