

FOBISIA PRIMARY MATH COMPETITION 2024

SECTION A [15 marks]

Questions 1 to 5 carry 3 marks each.

For each question, 5 options are given. One of them is the correct answer.

Select your answer and write it on the Answer Sheet.

Q1. In our row in the theatre the seats are numbered consecutively from M1 to M50. I am sitting in seat M17 and you are sitting in seat M39. How many seats are there between us?

(1) 19

(2) 21

(3) 22

(4) 23

(5) 24

Q2. A class of 30 students recently wrote a test. 20 students scored 80 marks, 8 students scored 90 marks and 2 students scored 100 marks. What was the class average on this test?

(1) 82

(2) 84

(3) 86

(4) 88

(5) 90

FOBISIA PRIMARY MATH COMPETITION 2024

Q3. If $Z = 10^3 + 10^4 + 10^5 + 10^6 + 10^7 + 10^8 + 10^9$. What is the sum of the digits of Z?

- (1) 1
- (2) 6
- (3) 9
- (4) 7
- (5) 12

Q4. The odd numbers from 5 to 21 are used to build a 3 by 3 magic square. If 5, 9 and 17 are placed as shown, what is the value of x?

	5	
9		17
x		

- (1) 7
- (2) 11
- (3) 13
- (4) 15
- (5) 19

FOBISIA PRIMARY MATH COMPETITION 2024

Q5. A kettle is 80% full. After 20% of the water in the kettle has been poured out, there is 1152 ml of water left. What volume of water would the kettle hold if it is full?

(1) 1400 ml

(2) 1600 ml

(3) 1700 ml

(4) 1800 ml

(5) 2000 ml

FOBISIA PRIMARY MATH COMPETITION 2024

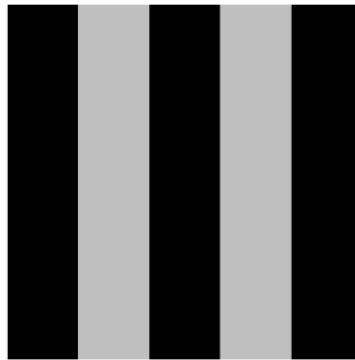
SECTION B [20 marks]

Questions 6 to 10 carry 4 marks each.

For each question, 5 options are given. One of them is the correct answer.

Select your answer and write it on the Answer Sheet.

- Q6. The diagram shows a square divided into strips of equal width. Three strips are black and two are grey. What percentage of the perimeter of the square is grey?



- (1) 20 %
- (2) 25 %
- (3) 30 %
- (4) 35 %
- (5) 40 %

FOBISIA PRIMARY MATH COMPETITION 2024

Q7. Johnny trained for a marathon.

On Monday, he ran a certain distance.

On Tuesday, he ran twice as far as he ran on Monday.

On Wednesday, he ran half as far as he ran on Tuesday.

On Thursday, he ran half as far as he ran on Wednesday.

On Friday, he ran twice as far as he ran on Thursday.

If the shortest distance that he ran on any of the five days is 5 km, how far did he run in total?

(1) 17.5 km

(2) 25 km

(3) 27.5 km

(4) 50 km

(5) 55 km

FOBISIA PRIMARY MATH COMPETITION 2024

Q8. Only one of the following statements is true.

A said B is true.

B said E is false.

C said A to E are false.

D said A to E are true.

E said A is false.

Whose statement is true?

(1) A

(2) B

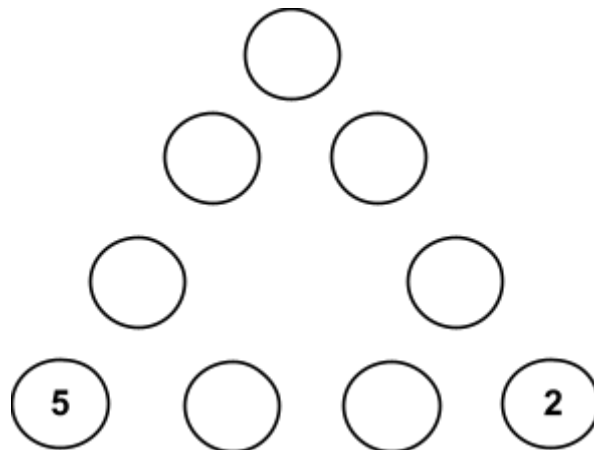
(3) C

(4) D

(5) E

FOBISIA PRIMARY MATH COMPETITION 2024

- Q9. Jenny wants to complete the diagram so that each of the nine circles contains one of the digits from 1 to 9 inclusive and each contains a different digit. The digits in each of the three lines of four circles must have the same total. What is this total?



- (1) 17
- (2) 18
- (3) 19
- (4) 20
- (5) 21

FOBISIA PRIMARY MATH COMPETITION 2024

Q10. On Monday, Michael drove to work at an average speed of 70 km/h and arrived 1 minute late. On Tuesday, he left at the same time and took the same route. This time he drove at an average speed of 75 km/h and arrived 1 minute early. How long is his route to work?

(1) 30 km

(2) 35 km

(3) 55 km

(4) 60 km

(5) 75 km

FOBISIA PRIMARY MATH COMPETITION 2024

SECTION C [25 marks]

Questions 11 to 15 carry 5 marks each.

For each question, 5 options are given. One of them is the correct answer.

Select your answer and write it on the Answer Sheet.

Q11. Cain and Abel played a game for two people. In each game, the winner was awarded 2 points and the loser 1 point. No games were drawn. Cain won exactly 4 games and Abel had a final score of 10 points. How many games did they play?

(1) 5

(2) 6

(3) 7

(4) 8

(5) 9

Q12. The expression $\frac{1}{2} + \frac{2^1}{2^2} + \frac{2^2}{2^3} + \dots + \frac{2^{2002}}{2^{2003}} + \frac{2^{2003}}{2^{2004}}$ is equal to

_____.

(1) 501

(2) 1002

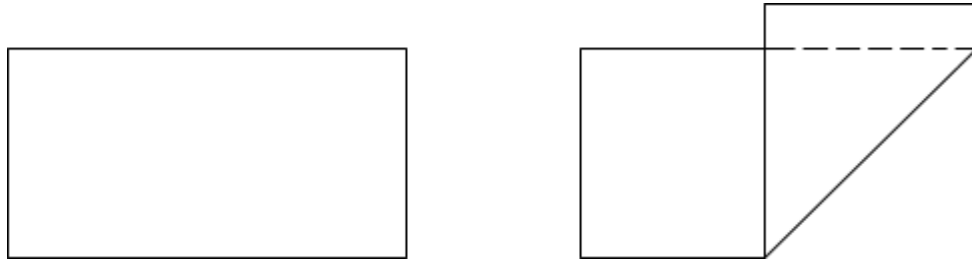
(3) 2002

(4) 2004

(5) 4008

FOBISIA PRIMARY MATH COMPETITION 2024

- Q13. A rectangular piece of paper measures 17 cm by 8 cm. It is folded so that a right angle is formed between the two segments of the original bottom edge, as shown. What is the area of the new figure?



- (1) 64 cm^2
- (2) 72 cm^2
- (3) 81 cm^2
- (4) 104 cm^2
- (5) 168 cm^2

FOBISIA PRIMARY MATH COMPETITION 2024

Q14. In the subtraction shown below, K, L, M, and N are integers.

$$\begin{array}{r}
 \begin{array}{cccc}
 & 5 & K & 3 & L \\
 - & M & 4 & N & 1 \\
 \hline
 & 4 & 4 & 5 & 1 \\
 \hline
 \end{array}
 \end{array}$$

What is the value of $K + L + M + N$?

- (1) 9
- (2) 16
- (3) 19
- (4) 20
- (5) 24

FOBISIA PRIMARY MATH COMPETITION 2024

- Q15. Cindy plays a game. She starts with a row of 15 squares and a coin on the centre square. She then rolls a die. If she rolls an even number, she moves the coin that many squares to the right. If she rolls an odd number, she moves the coin that many squares to the left. If the results of six rolls were 1, 2, 3, 4, 5, 6, where would her coin be located?

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

- (1) On the square where she started
- (2) 1 square to the right of where she started
- (3) 2 squares to the right of where she started
- (4) 2 squares to the left of where she started
- (5) 3 squares to the right of where she started

FOBISIA PRIMARY MATH COMPETITION 2024

SECTION D [40 marks]

Read the questions carefully and write your answer on the Answer Sheet.

The number of marks available is shown in the brackets at the end of each question.

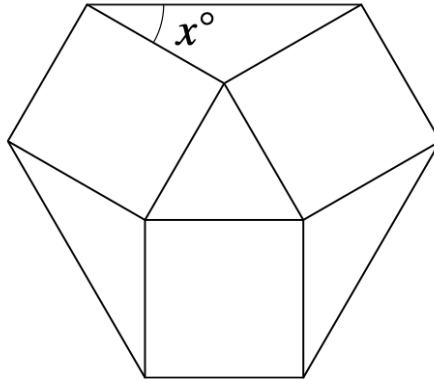
Q16. P, Q and R are positive integers and $P + \frac{1}{Q + \frac{1}{R}} = \frac{25}{19}$.

What is the value of R?

Answer : _____ [6 marks]

FOBISIA PRIMARY MATH COMPETITION 2024

- Q17. An equilateral triangle is surrounded by three squares, as shown. What is the value of x ?



Answer : _____ [7 marks]

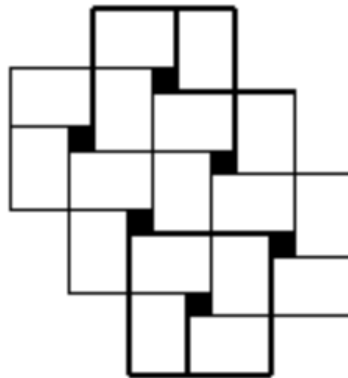
FOBISIA PRIMARY MATH COMPETITION 2024

- Q18. In a pile of 200 coins, 2% are gold coins and the rest are silver. Simple James removes one silver coin every day until the pile contains 20% gold coins. How many silver coins does James remove?

Answer : _____ [8 marks]

FOBISIA PRIMARY MATH COMPETITION 2024

- Q19. The diagram below shows part of a tiling pattern which is made from two types of individual tiles: 8 cm by 6 cm rectangular white tiles and square black tiles. If the pattern is extended to cover an infinite plane, what fraction of the plane is coloured black?



Answer : _____ [9 marks]

FOBISIA PRIMARY MATH COMPETITION 2024

- Q20. Michael, Dan, Sarah, Elisha and Kenny are sitting on a park bench. Michael is not sitting on the far right and Dan is not sitting on the far left. Sarah is not sitting at either end. Kenny is not sitting next to Sarah and Sarah is not sitting next to Dan. Elisha is sitting to the right of Dan but not necessarily next to him. Who is sitting at the far right end?

Answer : _____ [10 marks]