AMO MOCK TEST #2 - GRADE 7

Time allowed: 90 minutes

INSTRUCTIONS Please read all the instructions below carefully. MARKS

1. Please **DO NOT OPEN** the contest booklet until the Proctor has given permission to start.
2. Attempt all 15 questions. Each question scores 1 point. No points are deducted for incorrect answers.
3. **No calculators** are allowed, but dictionaries are.

Question 1. For the Maths Olympiad, each school can send a maximum number of 6 students. Suppose 405 students took part in the Maths Olympiad. What is the minimum number of schools that can send students to the Olympiad?

Question 2. Given that

$$\frac{1}{10+\dfrac{1}{9+\dfrac{1}{9}}}+\frac{1}{a+\dfrac{1}{b+\dfrac{1}{b+\dfrac{1}{b}}}}=1.$$

Note that a and b are whole numbers, find the value of $a+b$.

LIVEWORKSHEETS

Question 3. If Nur writes all the numbers from 5 to 75, which are divisible by 5. What will be the number at 7^{th} position?

Question 4. The train has 17 compartments. Each compartment is $14m$ long. The connector for every two compartments is $1.5m$ long. What is the length of the train?

Question 5. A group of workers is paving a road. If they pave $200m$ of the road a day, they will need 3 more days to finish the work. If they pave $240m$ of the road a day, they will finish the work 2 days in advance. How long is the road?

LIVEWORKSHEETS

Question 6. Jonathan has 55 marbles. Kevin has 35 marbles. How many marbles must Jonathan give Kevin so that the number of marbles that Kevin has is twice that of Jonathan?

Question 7. A train takes $27s$ to cross a bridge $420m$ long. It takes $30s$ to pass through a tunnel $480m$ long at the same speed. What is the length of the train in metre?

Question 8. In a collection of black, yellow, and orange marbles, there are 35% more black marbles than yellow marbles, and there are 60% more orange marbles than black marbles. If there are 135 black marbles, what is the total number of marbles?

LIVEWORKSHEETS

Question 9. The K-row of the theatre has 300 seats. Annabella walks into the row and realizes that someone is sitting next to her no matter which seat she chooses. How many people are already seated in K-row?

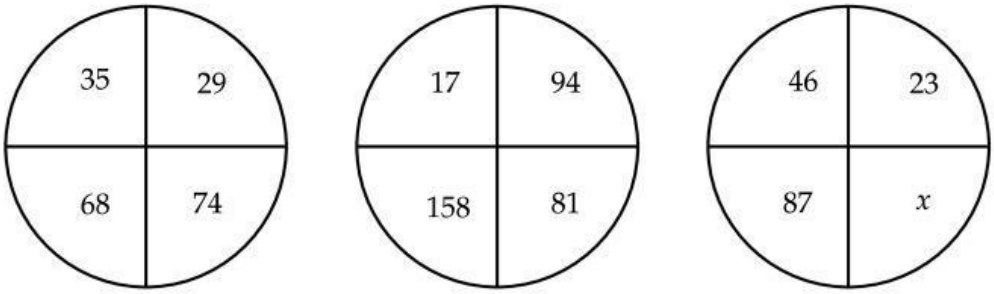
Question 10. Sarah remembers that her father's birthday is after 15^{th} but before 22^{nd} of August. Her sister Ashley remembers that her father's birthday is before 27^{th} and after 20^{th} of August. On which date of August is their father's birthday?

Question 11. Find the last two digits of number 105^N where N is a natural number, N is greater than 2.

LIVEWORKSHEETS

Question 12. Three cubes with sides $4cm$, $5cm$ and $6cm$ respectively are painted red on their surfaces before they are cut into $1 \times 1 \times 1$ cubes. After they are cut into $1 \times 1 \times 1$ cubes, find the total number of $1 \times 1 \times 1$ cubes obtained which have at least one face painted red.

Question 13. Observe the figures below. What is the value of missing number x?



LIVEWORKSHEETS

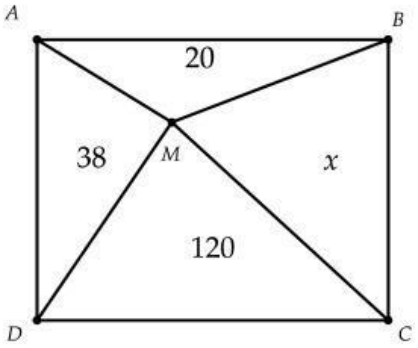
Question 14. The length, the breadth and height of a cuboid (rectangular box) is in the ratio of 4 : 3 : 2 and the total length of all edges is equal to $27cm$. Find, in cm^3, the volume of the cuboid.

Question 15. How many numbers are there in the following number sequence?

$$1.11, 1.12, 1.13, 1.14, ..., 9.98, 9.99$$

LIVEWORKSHEETS

Question 16. $ABCD$ is a rectangle which is divided into 4 triangles as the figure below. The areas of AMB, AMD and DMC are $20cm^2$, $38cm^2$, $120cm^2$ respectively. What is the area of BMC in cm^2?



Question 17. How many three-digit numbers such that each digit is different from one another are there?

LIVEWORKSHEETS

Question 18. If the weight of a cuboid, of size 20cm $\times$ 5cm $\times$ 20cm, is 20kg then find the weight of an another cuboid of same material with the size 20cm $\times$ 5cm $\times$ 19cm, in kilogram.

Question 19. Joshua says, "If Janelle gives me $25, she will have half as much as Eva. But, if Eva gives me $25, then three of us will have the same amount." What is the total amount of money that Joshua, Janelle, and Eva have among themselves, in US dollar?

Question 20. A book has 188 pages. How many digits are used for printing all the page numbers?

LIVEWORKSHEETS

Question 21. Instead of dividing a number by 4, Janice multiplies it by 4. Instead of adding 28, she subtracted 28 from it. The result was 36 after the two mistakes. What should be the original result?

Question 22. The average weight of Alison and Belinda is $26kg$. The average weight of Alison and Carol is $22kg$. The average weight of Belinda and Carol is $24kg$. Find the weight of Carol.

Question 23. The ratio of the weight of Isaac to that of his friend Joshua is 7 : 10. Joshua goes on a diet and loses 6 kg and now the ratio of their weights is 7 : 8. How much does Joshua weigh now?

LIVEWORKSHEETS

Question 24. There are 65% of the students at Raffle Junior High School play piano, 40% of the students play basketball and 25% of the students both play piano and basketball. What is the percentage of the number of students who do neither play piano nor play basketball at Raffle Junior High School?

Question 25. The parking lot of a mall has a capacity of 868 cars. On Thursday, the ratio of the empty parking spots to occupied parking spots is 21 : 41. How many cars were parked there on that day?

LIVEWORKSHEETS