MATHEMATICS OLYMPIAD GRADE SIX

DATE: 12 AUGUST 2024 – 16 AUGUST 2024

TIME: 90 MINUTES

INSTRUCTIONS:

1. This booklet has 15 multiple choice and 5 open ended questions.
2. Use the answer sheet provided.

   Circle the letter corresponding to your answer.
3. All working details must be done in the space provided.
4. Calculators are not permitted.
5. Diagrams are not necessarily drawn to scale.
6. The first 15 problems carry 1 mark each and the next 5 carry 2 marks each.
7. You have 90 minutes for the paper which works out to an average of 4.5 minutes per question.
8. Read the questions carefully before answering.
9. Visit the website: www.saolympiads.co.za.

GRADE SIX

1. Evaluate: 16 + $\frac{1}{4}$ X 16

   (A) 16 (B) 20 (C) 24 (D) 28

2. What is (30 ÷ 7) correct to 2 decimal digits?

   (A) 4.29 (B) 4.28 (C) 4.27 (D) 4.39

3. Evaluate: 154 + 200 + 46

   (A) 360 (B) 380 (C) 400 (D) 420

4. Evaluate: 264 x 75

   (A) 19200 (B) 19400 (C) 19600 (D) 19800

5. Evaluate: 0.6 ÷ 0.02 x 0.1

   (A) 0.003 (B) 0.03 (C) 3 (D) 30

6. Evaluate: 1001 x 99 – 99

   (A) 99900 (B) 90900 (C) 99000 (D) 98000

7. What is the price of 1 kg of cheese if 600g cost R108?

   (A) R180 (B) R168 (C) R158 (D) R148

8. A water tank is $\frac{2}{3}$ full. After using 400 litres of water $\frac{1}{4}$ remained. What is the capacity in litres of the tank when full?

   (A) 1000 (B) 960 (C) 920 (D) 900

9. When the 5-digit number 3mm52 is divided by 9 the remainder is 2. The value of m is ...

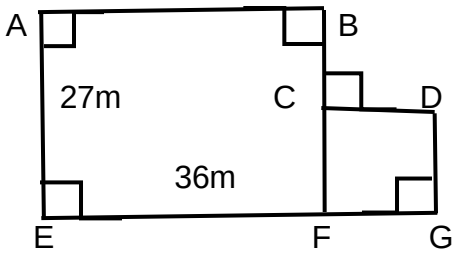
(A) 2 (B) 3 (C) 4 (D) 5

10. There were 6 white discs; 7 green discs and 4 orange discs in a container. What is the least number of discs that a blind folded person must remove to ensure that 3 green discs are taken out?

(A) 7 (B) 11 (C) 13 (D) 17

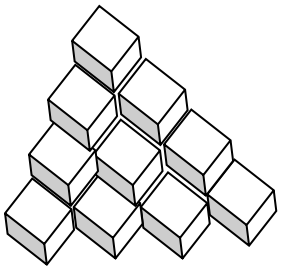
11. The area of rectangle ABFE is thrice the area of square CDGF.

Determine the perimeter in metres of CDFG.



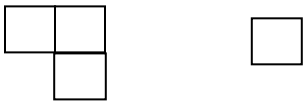
(A) 60 (B) 72 (C) 76 (D) 80

12. This tower is 4 storey high and is made up of cubes. How many cubes are used to make a 10 storey tower?



(A) 196 (B) 204 (C) 220 (D) 224

13. How many lines of symmetry does the following figure (made up of 3 equal squares) have if the extra square can be used?

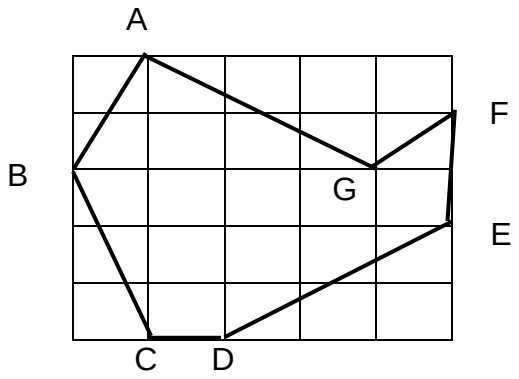


(A) 8 (B) 7 (C) 6 (D) 5

14. Romy is 3 years more than half the mother's age. In 8 years, time the mother will be 50. What is Romy's age?

(A) 18 (B) 21 (C) 24 (D) 27

15. Determine the area of ABCD (in cm^2) if each square is $1cm^2$.



(A) 12 (B) 14 (C) 15 (D) 16

16. If $\frac{4}{15} + \frac{1}{n} = \frac{7}{20}$ then the value of 'n' is…

17.

In a hotel the even numbered rooms are made up in the following order:-
The worker started at a certain numbered room, then did the room 4 numbers to the right, the 8 rooms to the left and finally 2 rooms to the right numbered 8.
What room number did the worker start at?

18. 70 natural numbers were arranged from 11 to 80. Every 3rd number was struck off. Of the remaining numbers every 4th number was struck off. How many odd numbers remained?

19. A plant increased its height by half of its previous height every week. If its height in the 3rd week was 54cm then determine its height in cm in the first week.

20. Calculate the sum:-

1x1x1 + 2x2x2 + 3x3x3 + 4x4x4 + 5x5x5 +…..+ 20 x 20 x 20

MARKS: 1-15: 15 X 1 = 15
16-20: 5 X 2 = 10

TOTAL: 25