MATHEMATICS OLYMPIAD GRADE SEVEN

DATE: 6 – 20 AUGUST 2025

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.

1. Evaluate: 30 - 10 $\div \frac{2}{5}$
   (A) 4 (B) 5 (C) 6 (D) 7

2. Write down the value of: 40 x 375
   (A) 12000 (B) 13000 (C) 14000 (D) 15000

3. When 400 is decreased by 20% the answer is….
   (A) 300 (B) 310 (C) 320 (D) 340

4. Evaluate:
   111 + 888 + 222 + 999
   (A) 2220 (B) 2200 (C) 2100 (D) 2000

5. Determine:
   $\sqrt[3]{216000}$
   (A) 60 (B) 70 (C) 80 (D) 90

6. If 6 workers take 5 days to build a wall. How long in days will it take 10 workers working at the same rate to build this wall?
   (A) 2 (B) 2.5 (C) 3 (D) 4

7. Determine the 25th term of this addition sequence.
   7; 12; 17; 22; …….
   (A) 133 (B) 131 (C) 129 (D) 127

8. In the following subtraction problem find A + B+C = ……

$$\begin{array}{r} C\ 3\ 4 \\ -\ \ B\ A \\ \hline 4\ B\ A \end{array}$$

   (A) 16 (B) 17 (C) 18 (D) 19

9. Evaluate:
   $\frac{15}{16}\ x\ 88 + \frac{5}{8} x\ 88 + \frac{11}{16} x\ 88\ - \frac{3}{8}\ x\ 88$
   (A) 180 (B) 175 (C) 170 (D) 165

10. A water tank is $\frac{5}{8}$ full. When 50 blocks measuring 100cm by 500 cm by 20cm are dropped into the tank, the water level rises to $\frac{3}{4}$ of the tank. What is the capacity of the tank in kl? (Note: 1000 litres = 1 kl and 1cm^3 = 1ml)
    (A) 400 (B) 440 (C) 480 (D) 520

11. The following addition is done in base 6.

333
555
444
2020

What is the answer to 345 + 444 + 245 in base 6?

(A) 1422 (B) 1322 (C) 1522 (D) 1222

12. Observe the following pattern:

7 9

11 13 15

17 19 21 23

.....

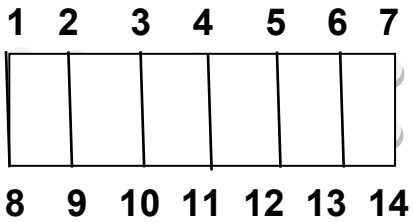
What is the 1st number of the 24th row?

(A) 611 (B) 609 (C) 607 (D) 605

13. Des travelled from Rose to Lily. He covered $140km$ of the distance by train, $\frac{1}{5}$ the remaining distance by car. He still has 100km to travel. What is the distance in km between Rose and Lily?

(A) 265 (B) 270 (C) 275 (D) 280

14.



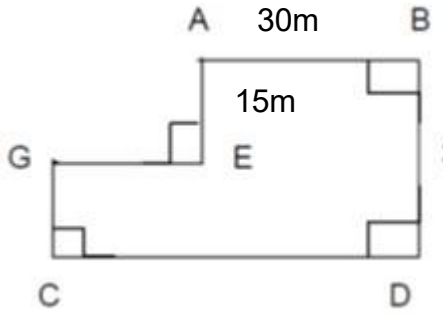
At a function each person was requested to stand opposite a designated person for example 1 stood opposite 8 ; 10 stood opposite 3. At a function of 100 people determine the number of the person that 40 stood opposite.

(A) 45 (B) 33 (C) 60 (D) 65

15. The LCM of 2 numbers is 84. If the two numbers are in the ratio 3:4 then find the sum of the 2 numbers.

    (A) 45 (B) 48 (C) 49 (D) 54

16. The cost of tiling this hall is R360 per m^2 and the total cost amounted to R230400. If GE = 8 metres; AB = 30 metres and AE= 15metres, then determine the length of GC (in metres).



17. An exchange centre gave the exchange rates as follows:-
    5 ringets for 2 dollars
    5 franks for 3 puntos
    2 ringets for 1 frank
    How many puntos can one get for 4 dollars?

18. How many minutes before 13:00, is the angle between the minute and the hour hand on an analogue clock 85^0?

19. Calculate:
    125 – 120 + 115 – 110 +.....+15

20. Eleven different plastic numbers from 10 to 20 are such that when 3 numbers are added at a time, they give an answer that is divisible by 7. How many such combinations are there?

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

TOTAL: 25