SOUTHERN AFRICAN PRIMARY MATHEMATICS OLYMPIAD FEMSSISA

GRADE7

E-mail : Info@saolympiads .co.za website: www.saolympiads.co.za

DATE: 15 – 19 AUGUST 2022

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 one 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 SEVEN

1. Evaluate: 20 - 20 x $\frac{2}{5}$

   (A) 0 (B) 12 (C) 20 (D) 25

2. Write down the value of: 4.4 x 2.5 x 100

   (A) 1600 (B) 1400 (C) 1200 (D) 1100

3. Find the value of: 220 x 220 – 220 x 218 - 220

   (A) 220 (B) 219 (C) 218 (D) 0

4. In the following addition problem find A+B+C = ……

   A B C
   A B C
   B C
   7 9 C

   (A) 14 (B) 15 (C) 16 (D) 17

5. If $\frac{2}{7}$ of the books in a home library is 180 then find $\frac{2}{3}$ of the books in the library.

   (A) 390 (B) 400 (C) 410 (D) 420

6. This is a type of Fibonacci sequence: 2;2;4;6;10; ……..

   If the sum of the first 10 terms is 286 then find the 11th term.

   (A) 178 (B) 168 (C) 158 (D) 148

7. When 1280 is divided by p the remainder is 20. What is the smallest value p can have?

   (A) 21 (B) 28 (C) 32 (D) 34

8. Tess covers a certain distance in 10 minutes travelling at an average speed of 96km/h. What time in minutes will it take this person to cover this same distance travelling at an average speed of 80km/h?

   (A) 12 (B) 14 (C) 16 (D) 18

9. Evaluate:

$$\frac{2+4+6+\cdots+20}{5+10+15+\cdots+50}$$

   (A) $\frac{1}{5}$ (B) $\frac{1}{4}$ (C) $\frac{2}{5}$ (D) $\frac{1}{3}$

10. A water tank is $\frac{5}{8}$ full. When 50 blocks measuring 100cm by 100 cm by 10cm are dropped into the tank, the water level rises to $\frac{15}{16}$ of the tank. What is the capacity of the tank in litres?

    (A) 10 000 (B) 12 000 (C) 14 000 (D) 16 000

11. The HCF of 2 numbers is 24. If the two numbers are in the ratio 4:3, then find the sum of the 2 numbers.

    (A) 160 (B) 164 (C) 168 (D) 172

12. Observe the following pattern:

    4 6

    8 10 12

    14 16 18 20

    .....

    What is the 2nd number of the 30th row?

    (A) 932 (B) 934 (C) 944 (D) 425

13. In a cinema Pam is seated in the 7th row from the front and the 7th column from the right. She is also seated in the 16th row from the back and the 14th column from the left. How many seats were occupied if the last 8 rows were not occupied in the cinema?

(A) 280 (B) 320 (C) 360 (D) 400

14. If $\frac{17}{9} = 1 + \frac{1}{1+\frac{1}{1+\frac{1}{x}}}$ then find the value of x.

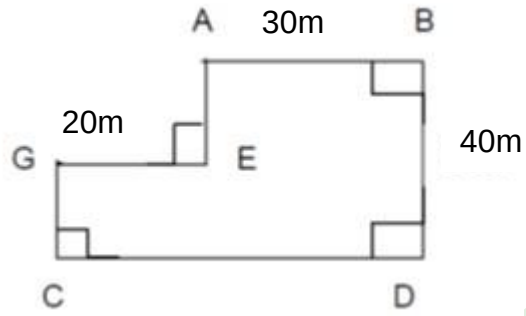
(A) 1/4 (B) 1/8 (C) 1/9 (D) 1/7

15. Calculate:

100 – 98 + 96 – 94 +.....+24

(A) 62 (B) 60 (C) 56 (D) 40

16. The cost of grassing this lawn is R150 per square metre and the total cost amounted to R225 000. If GE = 20 metres; AB = 30metres and BD = 40metres then give the measurement of GC in metres.



17. An exchange centre allowed the following exchanges:

- 5 platinum coins for 8 gold coins
- 5 Mandela coins for 7 bitcoins
- 3 platinum coins for 2 Mandela coins

How many gold coins can we get for 14 bitcoins?

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18. What is the angle in degrees between the minute hand and the hour hand on an analogue clock when the time shows 13:20?

19. Sandy runs twice as fast as Sarie, who runs twice as fast as Joanne. They took a total time of 42 minutes to complete the same race. How much time in minutes did Joanne take?

20. 21 consecutive plastic numbers from 20 to 40 are such that when 2 numbers are added at a time, they give an answer that is divisible by 8. How many such combinations are there?

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