SOUTHERN AFRICAN PRIMARY MATHEMATICS OLYMPIAD

FEMSSISA (SAPMO)

GRADE FOUR

FINAL ROUND

DATE: 11 OCTOBER 2018

TIME: 120 MINUTES

Instructions:

1. This booklet has 20 questions.

2. Use the answer sheet provided. Write your answer in the block provided.

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 120 minutes for the paper which works out to an average of 6 minutes per question.

8. Read the questions carefully before answering. If learners are experiencing difficulty in respect of the language then the invigilator can translate into the mother tongue.

Visit the website: www.femssisa.org.za
ENJOY THE OLYMPIAD

NON PROFIT COMPANY
REGISTRATION NO: 2015/050119/08

GRADE FOUR: 2018 FINAL ROUND

1. Write down the 9th number of this addition sequence.

   18; 21; 24; 27; …

2. Find the value of ☐

   ☐ + ☐ + ☐ = 112 - ☐

3. If Farah was 3 positions in front of where she was standing she would have been in the middle of the queue. She was in position 22 from the front. How many people were in the queue.

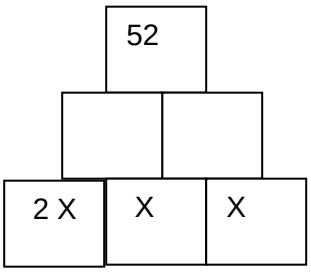
4. Raylene counted in 6's as follows:-
   8; 14; 20; 26; …
   She stopped at the 42nd number. What number did she count last?

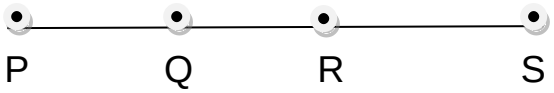
5. Guess the number I stand for.
   - I am a 3 digit number.
   - The last two digits can be counted in 4's.
   - My ten's digit is one more than my hundred's digit.
   - I am less than 400.
   - The sum of my digits is 15.

6. In this subtraction certain digits have been replaced by letters.
   What is the value of A + C?

```
  A 5 A
- 2 7 3
  C 8 C
```

7. In the game below called "PYRAMATHS' the number on the left is doubled and added to the number on the right to give the number in the box above. Find the number that should replace X.



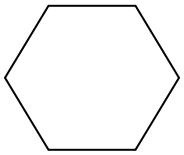
8. 

Four houses P; Q; R and S are on a straight road. The distance from P to S is 1000metres. The distance from Q to S is 600metres and from P to R is 720metres.
What is the distance from Q to R?

9. If one quarter of a certain number is 30 then what is one fifth of this number?

10. Penny has 4 times as much money as Tom. If both have R300 then how much does Tom have?

11. How many lines of symmetry does this regular polygon have?

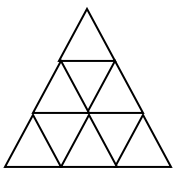


12. A container is $\frac{3}{4}$ full of water. When 200 litres are removed then it is two thirds full. What is the capacity of the container when full?

13. The cost of 4 litres of oil is R64. What would you pay for 1.5 litres of water at the same rate?

14. If the sum of the dates from Sunday to Thursday is 45 then what is the date of the 2nd Saturday of the month?

15. How many triangles of all sizes in this figure?



16. Enver collected R100 less than half of Luyanda. If both collected R1100 then what did Enver collect?

17. Study the following problem. Do you know what © is doing to the 2 numbers?

    6 © 2 = 19 5 © 4 = 17 2 © 2 = 7

    After you have discovered what © does then find the answer to

    6 © 6

18. 4 cans of cooldrink cost R17,98. What will 12 such cans of cooldrink at the same rate cost?

19. A company made triangular tables with 3 legs and quadrangular tables with 4 legs. There were 180 legs and 50 tables. How many triangular tables were made?

20. The sum of the digits of a 3 digit number abc (a;b and c digits) is as follows:-

    a + b = 9

    b+ c = 10

    a + c = 7

    What is the 3 digit number?

TOTAL: 15 x 1 = 15

5 x 2 = 10

25

SOUTHERN AFRICAN PRIMARY MATHEMATICS OLYMPIAD

FEMSSISA (SAPMO)

GRADE FIVE

FINAL ROUND

DATE: 11 OCTOBER 2018

TIME: 120 MINUTES

Instructions:

1. This booklet has 20 questions.

2. Use the answer sheet provided. Write your answer in the block provided.

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 120 minutes for the paper which works out to an average of 6 minutes per question.

8. Read the questions carefully before answering. If learners are experiencing difficulty in respect of the language then the invigilator can translate into the mother tongue.

Visit the website: www.femssisa.org.za
ENJOY THE OLYMPIAD

NON PROFIT COMPANY
REGISTRATION NO: 2015/050119/08

GRADE FIVE: 2018 FINAL ROUND

1. Write down the 12th number of this addition sequence.

   18; 23; 28; 33; …

2. Find the value of ☐

   78 - ☐ = ☐ + ☐

3. Pretty was 3 positions to the right of the middle of the queue. She was in position 28 from the left numbered from 1.
   How many people were in the queue?

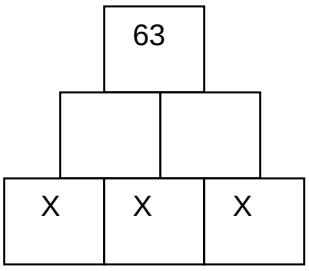
4. Jerry counted in 6's as follows:-
   14; 20; 26; 32; …
   She stopped at the 70th number. What number did she count last?

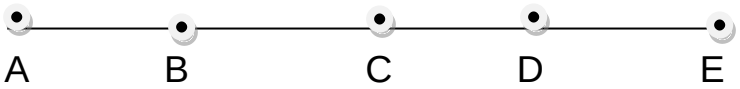
5. Find ☐ if
   ☐ x ☐ - ☐ = 42

6. In this subtraction certain digits have been replaced by letters.
   What is the value of A + B + C?

$$\begin{array}{rr} & A\ B\ C \\ - & B\ B\ 4 \\ \hline & 1\ 9\ 8 \end{array}$$

7. In the game below called "PYRAMATHS' the number right is doubled and added to the number on the left to give the number in the box above it. Find the number that should replace X.



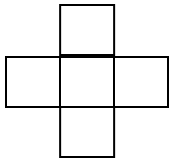
8. 

Four houses A; B; C ; D and E are on a straight road. The distance from A to E is 220m. The distance AB is 20 metres less than the distance BC which is 20 metres more than the distance from C to D.
The distance from C to E is 120 metres. What is the distance from A to B?

9. If two thirds of a certain number is 80 then what is one quarter of this number?

10. Ream has one quarter of the money less than Barry. If both have R280 000 then how much does Ream have?

11. How many lines of symmetry does this regular hexagon have?



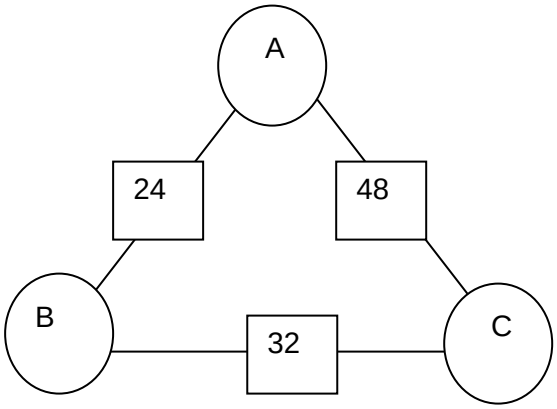
12. A container is $\frac{3}{4}$ full of water. When 20 litres are removed then it is $\frac{1}{3}$ full. What is the capacity of the container when full?

13. What is the value of 'n' if $\frac{3}{n} + \frac{1}{n} = \frac{1}{2}$

14. Study the following arrangement of numbers:-

1
3 5
7 9 11
……
What is the 4th number from the left of 25th row?

15. In the game called Geogons the product of the 2 numbers in the 2 circles gives the number in the square between them.



What is the value A + B + C .

16. Lindy wrote down a two digit number. Lindy then reversed the digits (example 24 becomes 42). She obtained a new number. She then added the two numbers to obtain the answer 121. Write down the sum of the digits of the number.
17. Patricia has 3 times as many 20 cent coins as R5 coins. If the total value of the coins is R560 then what is the value of the 20 cent coins?
18. Cilla is 4 years less than half her father's age. In 5 years time her father will be 59. What is Cilla's age?
19. Write down the sum of the digits of the following product. 222 222 x 555 555
20. Colour beads blue(B) and white(W) were used to make a necklace. The beads were arranged as follows:-
B W B W B W W B W W W B W W W W W B…..
What is the colour of the 50^{th} bead from the left?

TOTAL: 15 x 1 = 15
5 x 2 = 10

25

\

SOUTHERN AFRICAN PRIMARY MATHEMATICS OLYMPIAD

FEMSSISA (SAPMO)

GRADE SIX

FINAL ROUND

DATE: 11 OCTOBER 2018

TIME: 120 MINUTES

Instructions:

1. This booklet has 20 questions.

2. Use the answer sheet provided. Write your answer in the block provided.

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 120 minutes for the paper which works out to an average of 6 minutes per question.

8. Read the questions carefully before answering. If learners are experiencing difficulty in respect of the language then the invigilator can translate into the mother tongue.

Visit the website: www.femssisa.org.za
ENJOY THE OLYMPIAD

NON PROFIT COMPANY
REGISTRATION NO: 2015/050119/08

GRADE SIX: 2018 FINAL ROUND

1. Write down the 9th number of this addition sequence.

   6; 10; 15; 21; ….

2. Find the value of ☐ is a natural number

   15 + ☐ = ☐ x ☐ - ☐

3. What is the greatest product of three numbers whose sum is 29?

4. Find A x B x C if A; B and C are different.

```
  ABC
  ABC
+  BC
 822
```

5. Find the sum of the digits of the quotient

   666…..666 ÷ 222222

   (18 digits)

6. Evaluate

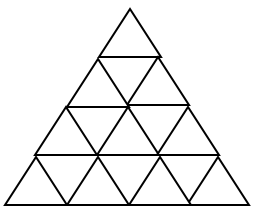
   64 x 543 + 56 x 543 - 100 x 543

7. Find the sum of:-

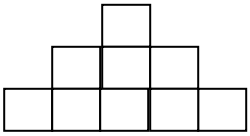
   3x3 +4x4 + 5x5 …. + 30x30

8. Two thirds of a number more than the number exceeds the number by 24. Find the number.

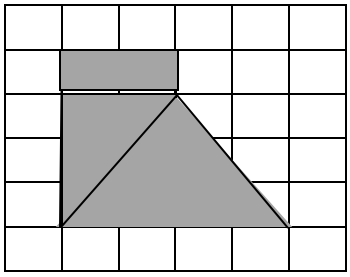
9. How many triangles of all sizes are there in this figure?



10. This tower is 3 storey high and is made up of cubes. Total number of cubes that is used to build a ‘n’ storey tower is 900. Find ‘n’



11. The combined ages of Cindy and Daisy is 46 years. If Daisy is 10 years older she will be the same age as Cindy. What will Cindy’s age be in 10 years time?
12. Determine the area of the shaded region



13. It takes 18 minutes to cut a log into 5 pieces. Jaryd cuts a similar log into 9 pieces working at the same rate. At what time did Jaryd start cutting the log if he completed the job at 09:50 without having any rest?

14. The average(mean) mark of 20 learners in a Mathematics Test is 25 whilst the average mark of the first 18 learners is 23. The 19^{th} learner obtained 6 more marks than the 20^{th} learner.
What is the mark of the 19^{th} learner?

15. Write down the sum of the digits of this product.
555555 x 444444

16. How many zeros does the following product end in?
25 x 24 x 23 x 22 x 21 x 20 x 19 x 18 ….. x 3 x 2 x 1

17. My watch loses 4 minutes every hour. The time was correct at 06:00. What was the watch time when the actual time 13:30 ?

18. In a basketball match points were scored in only 2's and 3's. Dream Machine scored 66 points from 27 shots. How many 3 pointers did the team score?

19. Calculate x + y if the sum these fractions is $\frac{11}{80}$:-

$$\frac{1}{5.7} + \frac{1}{7.9} + \cdots . + \frac{1}{x.y}$$

20. In a game of chance Lindi lost half of her money and then won R90. When she continued playing she trebled her money and thereafter lost R120. If she now had R600 then what did she start with?

TOTAL: 15 x 1 = 15
5 x 2 = 10

25

SOUTHERN AFRICAN PRIMARY MATHEMATICS OLYMPIAD

FEMSSISA (SAPMO)

GRADE SEVEN

FINAL ROUND

DATE: 11 OCTOBER 2018

TIME: 120 MINUTES

Instructions:

1. This booklet has 20 questions.

2. Use the answer sheet provided. Write your answer in the block provided.

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 120 minutes for the paper which works out to an average of 6 minutes per question.

8. Read the questions carefully before answering. If learners are experiencing difficulty in respect of the language then the invigilator can translate into the mother tongue.

Visit the website: www.femssisa.org.za
ENJOY THE OLYMPIAD

NON PROFIT COMPANY
REGISTRATION NO: 2015/050119/08

FEMSISA Grade 7 Final Round

1. Calculate $\frac{1}{3}$ x 95 x 6

2. On Friday 12 October 2018 Virginia was 16 years old. On what day of the week will be 50 years?

3. 1620 crystals are used to make 40 chains. How many crystals are needed to make 30 such chains?

4. After making $\frac{2}{9}$ of the table tops Danny still had 63 table tops to make. How many table tops were there altogether?

5. A floor measuring 5 metres by 4 metres was to be tiled using square tiles measuring 30cm by 30cm. How many full tiles were needed?

6. A company decided to distribute 40 calculators to each school. There were 160 surplus. This company decided to distribute 45 calculators per school and not to keep any. How many calculators the company initially have?

7. Liz won a 400 metre race in 72 seconds. Calculate the average speed in km per hour.

8. How many different combinations of composite numbers are there whose sum is 24?

9. Evaluate
$$\frac{6+12+18+\cdots+90}{4+8+12+\cdots+96}$$

10. A water tank is $\frac{1}{2}$ full. When 50 bricks measuring 25cm by 12 cm by 10 cm are dropped into the tank the water level rises to $\frac{2}{3}$ of the tank.
What is the capacity of the tank in litres?

11. Two numbers are in the ratio 4:5. The Highest Common Factor of the two numbers is 6. Find the Lowest Common Multiple of the two numbers.

12. Observe the following pattern

    6

    8 10

    12 14 16

    18 20 22 24

    .....

    What is the 2nd number of the 31st row?

13. In a cinema Pam is seated in the 10th row from the front and 8th column from the right. She is also seated 21st row from the back and 11th column from the left. How many seats in the cinema?

14. Calculate $\frac{1}{4-\frac{3}{3-\frac{1}{6}}}$ then find the value of x.

15. A bus travels from Ramston to Lemon at an average speed of 80km/hr. The same bus returns at an average speed of 60km/hr. The time taken for travelling is 3,5 hours. What is the distance from Ramston to Lemon?

16. The price of an article is increased by 10% and then by another 10%. Later it was reduced by 10% and sold for R1089.
    What was the initial price of the article?

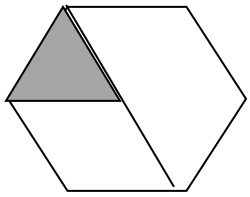
17. A vendor buys 8 discs for R9.

    He sells them at 5 for R12.
    How many discs must he sell to make a profit of R510

18. Three numbers are such that the differences between any two numbers are 10; 11 and 21. The sum of the 3 numbers is 59. What is the largest number?

19. When Hazel works alone she can do a job in 8 hours. When Jaimie works she can do the same the same job in 6 hours. If both worked together and at the same rate then how long will take to complete the same job?

20. If the area of the shaded region of this regular hexagon is $9cm^2$ then calculate the area of the hexagon.



TOTAL: 15 x 1 = 15
5 x 2 = 10

25