science & technology
Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

FEMSSISA SOUTHERN AFRICAN PRIMARY MATHEMATICS OLYMPIAD

(SAPMO)
GRADE SEVEN
FINAL ROUND
DATE: 12 OCTOBER 2017
TIME: 120 MINUTES

Instructions:

1. This booklet has 20 questions.
2. Use the answer sheet provided. Enter your answer in the block.
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.

foundation for english, mathematical sciences, sports and innovation of south africa
FEMSSISA
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REGISTRATION NO:
2015/050119/08
NRF National Research Foundation
SAASTA South African Agency for Science and Technology Advancement

GRADE SEVEN FINAL ROUND 2017

1. Calculate

   58 x 2017 + 41 x 2017 + 2017

2. The scale on a map shows the ratio 1:400 000. The actual distance between Dafodil Town and Protea Town is 80 km. What is the map distance between Dafodil Town and Protea Town ?

3. On Friday 22 September 2017 Sash was 16 years. On what day of the week was Sash born?

4. Evaluate
   $$\frac{9+12+15+18+\cdots+63}{8+12+16+20+\cdots+80}$$

5. After $\frac{5}{9}$ of the water was removed from a tank 360 litres remained. What is the capacity of the tank?

6. A rectangular lawn has perimeter of 46m. The area of the lawn is $120m^2$.
   How many paving bricks are needed for the shorter side if the length of each brick is 200mm..

7. An item was marked up by 20%. Two months later this item was increased by 10%. The new price was R528. Determine the initial price.

8. 6; 10; 15; 21... are triangular numbers. How many of the first 20 triangular numbers are divisible by 6 if the first number is 6?

9. . The average speed of an athlete for a 200m race is 30km/h. What time was recorded for the 200m race?

10. If $\frac{19}{12} = 1 + \cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{2+\frac{1}{x}}}}$ then find the value of x.

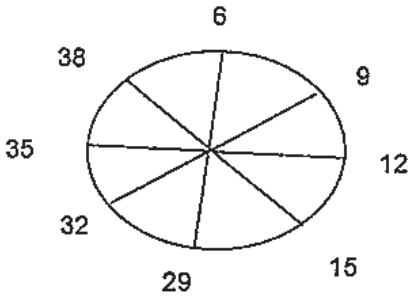
11. A rectangular reservoir measures 40 metres by 30metres with a uniform depth of 2.5metres. If each household uses 600 litres per day then how many household can use this water if the reservoir is filled to capacity?

12. A cycle manufacturer manufactures 2 wheel and 4 wheel bikes. In one week they manufactured 52 bikes and 144 wheels. How many 4 wheel bikes were manufactured?

13. The HCF and LCM of 2 numbers are 12 and 180. If one of the numbers is 60 then find the other number.

14. Arrange the following fractions from highest to the lowest.
$\frac{15}{19}$; $\frac{11}{14}$; $\frac{19}{24}$

15. Learners numbered from 1;2;3 etc were standing opposite their friends.6 was standing opposite 27; 9 opposite 32; 12 opposite 35 and so on.
How many learners were there in this arrangement?



16. There were different types of plants in the vegetable garden. At the end of 3 months the number of plants decreased by 10%. At the end of 6 months the number of plants increased by 20%. If the net increase was 180 then determine the initial number of plants.

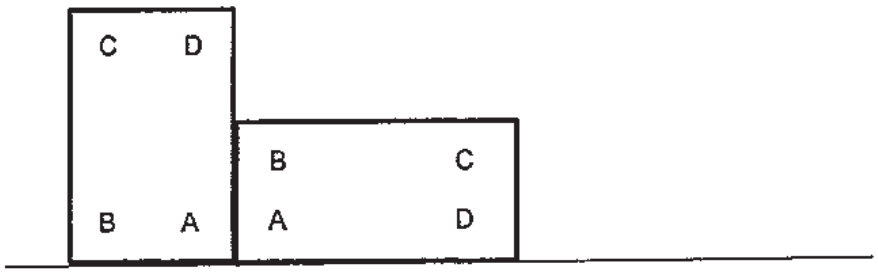
17. Consider the following arrangement of numbers:-

4
5 6
7 8 9
10 11 12 13
.....

Determine the 2nd number from the left of the 23rd row.

18. Camy added 2 consecutive whole numbers from 100 to 150. How many of these sums are not divisible by 9?

19. A rectangular block measuring 12cm by 6cm is rotated on a flat surface on a straight line without slipping. Refer to diagram. What is the distance from the initial position from B to the last point D when D touches the surface for the 3rd time?



20. Pam is twice as old as Rose when she was as old as Rose is now. If Rose is 24 years old then what is Pam's age?

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

25