

**SOUTHERN AFRICAN JUNIOR MATHEMATICS OLYMPIAD
FEMSISA MATHEMATICS OLYMPIAD
(SAJMO)**

GRADE FOUR

ROUND ONE

DATE: 4-8 JUNE 2012

TIME: 90 MINUTES

Instructions:

1. This booklet has 20 multiple choice 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.
3. Calculators are not permitted..
4. Diagrams are not necessarily drawn to scale.
5. The first 15 problems carry one mark each and the next 5 carry 2 marks each. In order to qualify for the second round you need 7 out of 25 marks.
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7. Read the questions carefully before answering.
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Grade Four Mathematics Olympiad

1. Find \square

$$\square - 10 = 16 - \square$$

- (A) 10 (B) 11 (C) 12 (D) 13

2. Which one of the following has the largest remainder?

- (A) $803 \div 4$ (B) $604 \div 6$ (C) $705 \div 7$ (D) $167 \div 8$

3. How many people are there in a queue if the middle person is the thirteenth one?

- (A) 22 (B) 23 (C) 24 (D) 25

4. How many days from 9 February 2012 to 9 April 2012?

- (A) 60 (B) 61 (C) 62 (D) 63

5. The number three thousand , one hundred and one can be written as

- (A) 3 110 (B) 3 011 (C) 3 101 (D) 3 001

6. Six teddy bears cost R122. How much will 12 such teddy bears cost at the same rate?

- (A) R61 (B) R224 (C) R244 (D) R284

7. What is the 10th number of this addition sequence

6; 10; 14; 18; ...

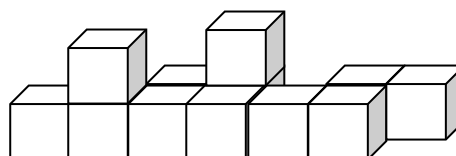
- (A) 40 (B) 42 (C) 46 (D) 50

8. What time did the clock show 3 hours and 50 minutes ago?



- (A) 06:20 (B) 07:20 (C) 06:30 (D) 07:30

9. How many blocks were used to build this structure?



- (A) 9 (B) 10 (C) 11 (D) 12

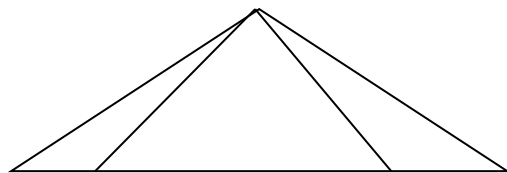
10. If Cindy has a certain amount of money. After spending $\frac{1}{4}$ of the money she has R60 left. How much did she start off with?

- (A) R72 (B) R76 (C) R80 (D) R84

11. If today is Thursday the 24th of March 2012 then what day will it be 54 days from today?

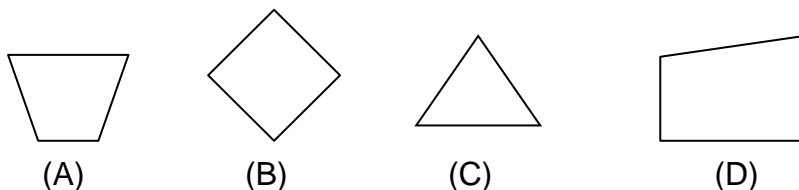
- (A) Tuesday (B) Wednesday (C) Thursday (D) Saturday

12. How many triangles of all sizes are there in the figure below?



- (A) 4 (B) 5 (C) 6 (D) 7

13. Which shape is the odd one out ?



14. Speedy wants to buy some health cakes. Which of these is the best choice?

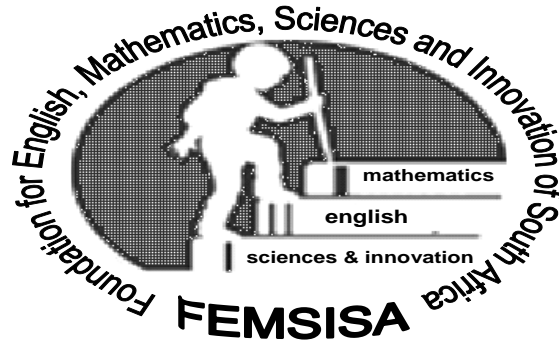
- (A) 275c each (B) 3 for R7 (C) 5 for R11 (D) 9 for R20

15. A club has 120 members. There are $1\frac{1}{2}$ more girls than boys. How many boys are there in the club.

- (A) 24 (B) 36 (C) 48 (D) 60

16. On 24 January 2012 Penny was 2 years 91 days older than Sammy. If Penny is 14 years old then what was the date of birth of Sammy?
 (A) 2 January 2003 (B) 2 January 2001 (C) 31 December 2000
 (D) 31 December 2002
17. Dicky had a secret number.
 Les found half of this number.
 Peter found one third of Les's number.
 Naven added 6 to the number to obtain 22. What is Dicky's secret Number?
 (A) 48 (B) 54 (C) 60 (D) 66
18. The Indian Professional League had 9 teams. Each team played every other team twice. Two matches were played each day. How many days did these two round fixtures take?
 (A) $3 \times R100 - R1$ (B) $3 \times R100 - R2$ (C) $3 \times R100 - R3$ (D) $3 \times R100 - R6$
19. Peggy said she had R10 more than twice the amount Lily had. In total they had R148. How much did Peggy have?
 (A) 5 (B) 6 (C) 30 (D) 25
20. At a cultural show every learner paid 10th learner paid R10 less for the ticket. The total amount collected R4350. How many people attended this cultural show?
 (A) 5 (B) 9 (C) 20 (D) 21

MARKS : Numbers 1-15 : $15 \times 1 = 15$
 Numbers 16-20: $5 \times 2 = 10$
 TOTAL: 25



SOUTHERN AFRICAN JUNIOR MATHEMATICS OLYMPIAD
FEMSISA MATHEMATICS OLYMPIAD
(SAJMO)
GRADE FIVE
ROUND ONE
DATE: 4-8 JUNE 2012
TIME: 90 MINUTES

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10. Which is the smallest?

- (A) 7.500m (B) 7.051m (C) 7.050m (D) 7,046

11. If 2 litres of milk cost R17,93 then what will 10 litres of milk at the same rate cost?

- (A) 2,5 (B) 25 (C) 250 (D) 2 500

12. An equal number of 10cent and 20cent pieces were obtained from R150 notes. How many 10cent pieces were obtained?

- (A) 13,4 (B) 16,8 (C) 142,8 (D) 168

13. Nigel said that if he was 4 years older he will be twice Tracy's age. Their combined ages is 41. How old is Nigel?

- (A) R20 (B) R22 (C) R24 (D) R 26

14. At a sale you received a discount of $\frac{1}{4}$ of the price. The price of an item after discount was R48. What was the original price of the item?

- (A) R54 (B) R60 (C) R64 (D) R68

15. Study the following problem. Do you know what (*) is doing to the 2 numbers?

$$2 * 5 = 10 \qquad 3 * 5 = 12 \qquad 4 * 5 = 14$$

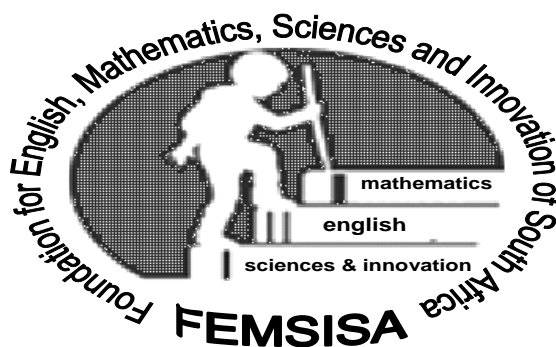
After you have discovered what (*) is doing then find the answer to

$$(2 * 6) * 7$$

- (A) R105 (B) R95 (C) R85 (D) R75

16. The time on an analogue clock is 5 o'clock. Find the smaller angle between the minute hand and hour hand,

- (A) Reflex (B) Right (C) Obtuse (D) Acute



SOUTHERN AFRICAN JUNIOR MATHEMATICS OLYMPIAD
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GRADE SIX
ROUND ONE
DATE: 4-8 JUNE 2012
TIME: 90 MINUTES

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Grade Six Mathematics Olympiad

1. $24 - 9 \times 2 = \dots$

- (A) 30 (B) 6 (C) 4 (D) 2

2. How many 20's are there in 4080?.

- (A) 200 (B) 202 (C) 222 (D) 201

3. If $3n - 2 = 52$ then $n = \dots$

- (A) 39 (B) 29 (C) 4 (D) 3

4. Evaluate $23 \times 78 + 77 \times 78$

- (A) $P + R$ (B) $P \times R$ (C) $P \times Q$ (D) $P \div R$

5. How many natural numbers below 100 has its sum of its digits equal to 7?

- (A) 5 (B) 10 (C) 12 (D) 60

6. In the following addition problem find $A+B+C$

$$\begin{array}{r} A B C \\ A B C \\ \underline{A B C} \\ 7 3 C \end{array}$$

- (A) 2,4 (B) 2,25 (C) 2,14 (D) 2,04

7. If $\frac{3}{5}$ of the apples in the box is 72 then find the total number of apples in the box..

- (A) 40 (B) 48 (C) 45 (D) 64

8. Donovan beat the 200 metres school record which was 24.3 seconds by 1,5seconds. What was the new record?

- (A) 24,74m (B) 24,3m (C) 23,37m (D) 23,74m

9. The actual distance between Laxton and Gardenia is 300km. The map distance is 20cm. The distance between Gardenia and Lindon is 400km. What is the amp distance between Gardenia and Lindon.

- (A) 40km (B) 96km (C) 144km (D) 960km

10. How many of the following decimal fractions lie between 0.3 and 0.4?

0.035; 0.35; 0.0.33; 0.05;0.09; 0.339; 0.401

(A) 0,85 (B) 0,078 (C) 0,699 (D) 0,08

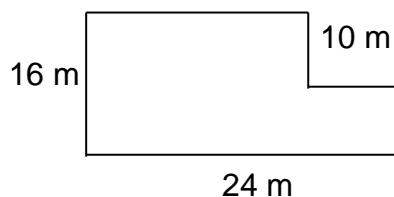
11. Determine the fraction between $\frac{2}{5}$ and $\frac{3}{4}$.

(A) 13,4 (B) 16,8 (C) 142,8 (D) 168

12. If 9% of n = R36 then find the value of n.

(A) 160kg (B) 1060kg (C) 1600kg (D) 16kg

13. Determine the perimeter of the following figure.



(A) 2,6 (B) 1,34 (C) 1,69 (D) 5,2

14. A hall has 36 rows. Each row has 24 seats. There were 20 seats which were vacant. The cost of tickets for the show was R40 each. What is the expected revenue if everyone paid?

(A) $R15 \times (240 - 18)$ (B) $(240 - 18 - 24) \times R15$
(C) $(240 - 24) \times R15$ (D) $240 - (24 \times R15)$

15. How much will 5 litres of juice cost if 1.5 litres cost R4.02? The rate is same.

(A) R37,50 (B) R40,00 (C) R42,50 (D) R45,00

16. Two guards are off duty every 5th day and every 6th day respectively? There must be at least one guard on duty. Both are off duty on a certain date. In a 91 day period how many times must a relief guard work?

(A) 11 February (B) 13 February (C) 15 February (D) 17 February

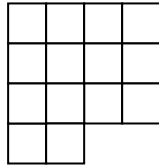
17. The area of a lawn is 60m^2 but its perimeter is 34 m. Determine the width of this lawn ?

(A) Square (B) Triangle (C) Octagon (D) hexagon

18. A company added 20% administrative costs on a product and then another 30% profit. What was the total added to this product as a %?

- (A) R20,00 (B) R30,00 (C) R22,50 (D) R32,50

19. How many squares of all sizes are there in the following figure?



- (A) 24 (B) 36 (C) 48 (D) 96

20. Calculate the sum of the following fractions.

$$\frac{1}{1.3} + \frac{1}{3.5} + \frac{1}{5.7} + \frac{1}{7.9} \dots + \frac{1}{23.25}$$

- (A) 2 (B) 3 (C) 5 (D) 6

MARKS : Numbers 1-15 : 15 X 1 = 15
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