MOUNT ROYAL
UNIVERSITY
1910

Seventh Annual

Calgary Elementary School
Mathematics Contest
April 25, 2018

LEVEL-2 CONTEST

Instructions:

• You have 50 minutes to answer the 20 questions.
• Record your answer for each question on the separate answer sheet.
• There is no penalty for incorrect answers, so answer every question.
• Good luck!

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Pacific Institute *for the*
Mathematical Sciences

PART A: Record the correct answer on the separate answer sheet. Each correct answer is worth **5 points.**

1. What is the missing number in the equation
   $97 + 103 + 117 = 103 + 115+$?
   (a) 91   (b) 94   (c) 99   (d) 101

2. What is one third of one fifth of 225?
   (a) 75   (b) 12   (c) 45   (d) 15

3. The product of three positive whole numbers is 30. Which of the following could be their sum?
   (a) 13   (b) 11   (c) 10   (d) 9

4. Ann has a piece of string which she cuts into pieces of length $3\frac{1}{2}$ cm, $7\frac{1}{4}$ cm, and $8\frac{1}{4}$ cm. How long was the original piece of string?
   (a) 10 cm   (b) $18\frac{1}{2}$ cm   (c) 19 cm   (d) $19\frac{3}{4}$ cm

5. I paid for an ice cream with 2 toonies, 1 loonie, 5 quarters, and 3 dimes. If I had paid using only nickles, how many nickles would I have needed?
   (a) 89   (b) 91   (c) 129   (d) 131

6. What is the smallest whole number which is divisible by 2, by 6, and by 10?
   (a) 20   (b) 30   (c) 60   (d) 120

7. Jerry's kitchen is 4 m long and 3.8 m wide. Tiling the floor costs $20 per m². How much will it cost to tile the entire kitchen floor?
   (a) $300   (b) $304   (c) $404   (d) $410

8. The area of a square is $25 \, \text{cm}^2$. What is its perimeter?
   (a) 5 cm   (b) 10 cm   (c) 20 cm   (d) 30 cm

9. In the sequence of whole numbers from 10 to 100, how many times does the digit 2 show up?
   (a) 10   (b) 19   (c) 18   (d) 12

10. If you buy a pack of a dozen pens you pay $6.50. Each pen costs 60 cents if you buy it individually. How much do you save if you buy 2 one-dozen packs (versus buying all the pens individually)?
    (a) 70 cents   (b) $1.40   (c) $1.50   (d) $1.60

11. The perimeter of a rectangle is 104 cm. The width is 6 cm less than the length. What is the length of the rectangle?

    (a) 20 cm   (b) 23 cm   (c) 29 cm   (d) 30 cm

12. In a group of 15 pizza lovers, 10 like bacon, 11 like mushrooms and 6 like both. How many like bacon but not mushrooms?

    (a) 8   (b) 9   (c) 1   (d) 4

13. A farmer has the same number of horses, cows, and chickens. Altogether these animals have 250 legs. How many cows are there?

    (a) 50   (b) 40   (c) 30   (d) 25

14. Peter has filled the numbers 1 to 9 in the cells of a 3×3 table, each number appearing only once. In the figure, you can see four of these numbers. Peter has noticed that for the number 2, the sum of the numbers in the neighbouring cells equals 14. The same is true for the number 3. Which number has Peter written in the shaded cell?

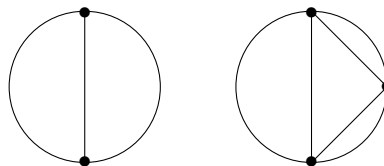 | 5 | | 6 |
    |---|---|---|
    | | | |
    | 8 | | 7 |

    (a) 1   (b) 4   (c) 9   (d) 2

15. Rita can dig a hole in 4 days. Amit can do the same thing in 6 days. If they work together for 12 days, how many similar holes can they dig?

    (a) 4   (b) 5   (c) 6   (d) 10

16. Select two points on a circle and join them with a straight line. The circle has been divided into 2 regions. Select three points on a circle and join each pair of points with a line. The circle is divided into four regions.
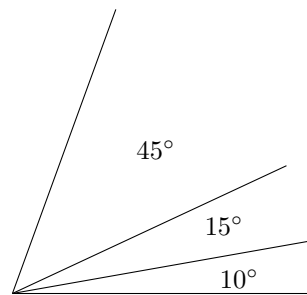

    If you select 4 points on a circle and join each pair of points with a straight line, how many regions do we get?

    (a) 5   (b) 6   (c) 7   (d) 8

17. Randy adds all the even numbers from 2 to 100. Romeo adds all the odd numbers from 1 to 99. Mary subtracts Romeo's answer from Randy's answer. What does she get?

    (a) 0   (b) 45   (c) 50   (d) 100

18. How many acute angles of different degree measure can be obtained in the following diagram? (An acute angle is less than 90 degrees).

    (a) 6   (b) 7   (c) 8   (d) 9

19. The difference between the squares of two consecutive whole numbers is 15. What is the larger of the two numbers?

    (a) 9   (b) 8   (c) 7   (d) 6

20. Darren bought 34 cones of ice cream for his 3 children: Robert, Carla, and Anna. Robert ate twice as many as Anna. Carla ate more than Anna but less than Robert. How many cones of ice cream did Carla eat?

    (a) 9   (b) 10   (c) 11   (d) 12