



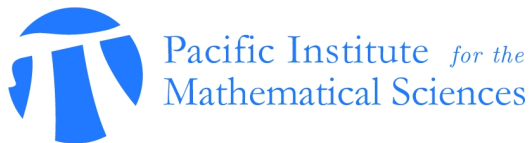
**Eleventh Annual
Calgary Elementary School
Mathematics Contest**
April 24, 2024

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!

Sponsors:



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

1. If the average of -3 and x is 2 , then x equals
(a) -8 (b) $-1/2$ (c) 5 (d) 7

2. 4% of 50 is NOT the same as
(a) 2% of 100 (b) 50% of 4
(c) 5% of 40 (d) 40% of 60

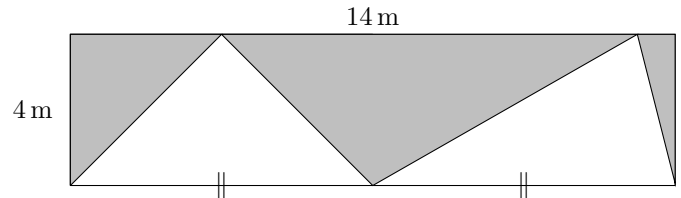
3. Which of the following numbers is not a prime number?
(a) 59 (b) 53 (c) 57 (d) 47

4. The diagram below shows a magic square in which the sums of the numbers in any row, column or diagonal are all equal. What is the value of n ?

8		
9		5
4	n	

- (a) 10 (b) 11 (c) 12 (d) 13

5. What is the area of the shaded part of the rectangle?



- (a) 18 m^2 (b) 28 m^2 (c) 36 m^2 (d) 56 m^2

6. Rearranging the digits of the number 579 produces different numbers. The sum of all such numbers, including 579 , is:

- (a) 4662 (b) 4065 (c) 3705 (d) 3687

7. In a group of 40 students,

- 20 of them study at least French
- 10 of them study at least Spanish
- 5 of them study both languages.

How many of the students study neither language?

- (a) 5 (b) 10 (c) 15 (d) 20

8. An ant is at the bottom of a 12 m deep well. Every day it climbs 3 m up but slides 2 m down, until it reaches the top. How many days does it take for the ant to come out of the well?

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

9. What is the surface area of a 2 cm by 2 cm by 3 cm rectangular prism?

- (a) 12 cm^2 (b) 24 cm^2 (c) 32 cm^2 (d) 36 cm^2

10. In 2024 , my birthday is on the 130^{th} day of the year. What day is my birthday?

- (a) May 8 (b) May 9 (c) May 10 (d) May 11

PART B: Record the correct answer on the separate answer sheet. Each correct answer is worth **6 points**.

11. When someone takes a rapid Covid test, one red bar indicates a negative test result, and two red bars indicates a positive test result. Fifteen rapid Covid tests are conducted. Among them, there were twenty red bars total. The number of negative test results is
 (a) 20 (b) 15 (c) 10 (d) 5

12. In an election for class president, there are four candidates. 61 votes are cast and each student voted at most once. The candidate with the highest number of votes is the winner. The smallest number of votes the winner can receive is
 (a) 15 (b) 16 (c) 21 (d) 30

13. Consider the two sequences:

Sequence A	2	4	8	16	32	64	...
Sequence B	100	200	300	400	500	600	...

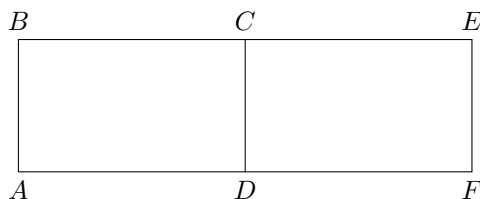
The dots “...” indicate the pattern continues forever. Which of the following statements is correct?

- (a) All the numbers of Sequence A will be smaller than their corresponding term in Sequence B.
 (b) Eventually, the numbers in Sequence A are bigger than the corresponding number in Sequence B, and once it happens, it stays that way.
 (c) Eventually, the numbers in Sequence A are bigger than the corresponding number in Sequence B, but even further out in the sequence, the numbers of Sequence B become larger again than their counterparts in Sequence A.
 (d) There is not sufficient information to say.
14. Suppose each one of the letters M, A, T, H represents a different digit from 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. If the sum of the numbers formed from the given letters is as shown below, then what is the sum $M+A+T+H$?

$$\begin{array}{r}
 \text{MATH} \\
 \text{ATH} \\
 \text{TH} \\
 + \text{H} \\
 \hline
 2024
 \end{array}$$

- (a) 5 (b) 6 (c) 11 (d) 12

15. Rectangles $ABCD$ and $DCEF$ are identical. Each has perimeter 30 cm. Rectangle $ABEF$ has perimeter 50 cm. What is the area of the rectangle $ABEF$?



- (a) 60 cm^2 (b) 80 cm^2 (c) 100 cm^2 (d) 200 cm^2 .

PART C: Record the correct answer on the separate answer sheet. Each correct answer is worth **8 points**.

16. Adam fills a 2.5 L jug with water, by the following process: First Adam pours 1 L of water in, then $1/2$ L then $1/3$ L then $1/4$ L, and so on. How many pours does it take until the jug overflows?

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

17. Each number after the first two numbers in a sequence is the sum of all the previous numbers. If the 10^{th} number is 2000, then the 8^{th} number is

- (a) 250 (b) 500 (c) 1000 (d) 1500

18. Consider the sequence

$$1, 3, 7, 15, 31, 63, \dots$$

What is the first *four-digit* number in this sequence?

- (a) 1023 (b) 1024 (c) 1047 (d) 1049

19. The integers 1 through 128 are spaced evenly, and in increasing order, around a circle. Straight lines that pass through the center of the circle join these numbers in pairs. Which number is paired with 15?

- (a) 64 (b) 69 (c) 75 (d) 79

20. Say that a number is **five-ish** if the sum of its digits is 5. For example, 113 is five-ish since $1 + 1 + 3 = 5$. How many five-ish numbers are there from 1 to 555?

- (a) 10 (b) 15 (c) 21 (d) 125