



**Eighth Annual
Calgary Elementary School
Mathematics Contest**
April 24, 2019

LEVEL-1 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:



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. The numbers 24, 36, 54, 60, and 72 are all multiples of
(a) 6 (b) 8 (c) 12 (d) 18

2. The time is now 08:42. What time will it be in 2hrs and 29 minutes?
(a) 10:11 (b) 10:71 (c) 11:01 (d) 11:11

3. On Monday I ate one grape. Each day I ate twice as many grapes as the previous day. How many grapes in total did I eat from Monday to Friday?
(a) 16 (b) 31 (c) 32 (d) 63

4. Which of the following numbers is the largest?
(a) $5/2$ (b) $6/3$ (c) 2.05 (d) 2.15

5. The product of two whole numbers is 24. Which of the following cannot possibly be the sum of the two numbers?
(a) 10 (b) 11 (c) 12 (d) 14

6. Alan works 8 hours a day for 5 days per week. If he earns \$880 per week, how much does he make per hour?
(a) \$20 (b) \$22 (c) \$110 (d) \$172

7. What is the difference between the smallest 5-digit number and the largest 3-digit number?
(a) 901 (b) 1000 (c) 9000 (d) 9001

8. Mr. and Mrs. Nguyen have two sons. Every son has exactly three sisters. How many people are there in the family?
(a) 5 (b) 7 (c) 8 (d) 10

9. 30 years ago Amy was half as old as she is today, how old will she be 10 years from now?
(a) 25 (b) 55 (c) 60 (d) 70

10. $(2018 + 2019 + 2020 + 2021 + 2022)/5 = ?$
(a) 2019 (b) 2020 (c) 2021 (d) 2025

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

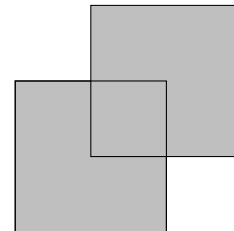
11. A number is a perfect square if its square root is a positive whole number. For example, 100 is a perfect square because $\sqrt{100} = 10$. Which of the following numbers is the sum of two different perfect squares?
(a) 8 (b) 9 (c) 24 (d) 25
12. The current year is 2019. How many years will it be before the sum of the digits in the year is greater than it is this year? [Note: for the year 1992 the sum of the digits is $1+9+9+2=21$]
(a) 1 year (b) 5 years (c) 10 years (d) 90 years
13. A candy store is having a sale.: buy four and get one for free. If one candy costs 25 cents, how many candies can you buy with \$12?
(a) 48 (b) 60 (c) 64 (d) 72
14. John and Amy are practicing for CESMC by solving math problems at home. For every three problems John solves, Amy manages to solve five problems. Altogether they solved 56 problems. How many more problems than John did Amy solve?
(a) 8 (b) 10 (c) 12 (d) 14
15. In a bag there are 5 green apples, 4 yellow apples, and 3 red apples. At least how many apples must you pull out to make sure that you have at least one apple of each color?
(a) 8 (b) 9 (c) 10 (d) 12

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

16. Jagmeet has a brother and a sister. From a box of candies, all three of them eat a candy on the first day. Jagmeet eats one candy every day, his brother eats one candy every other day and his sister eats one candy every three days. By the end of the 12th day, how many candies have been eaten by all three of them?
(a) 19 (b) 21 (c) 22 (d) 72
17. Jinfen was born on March 15, 2007. How many days is it until her 10th birthday?
Hint: A year is a leap year if it is divisible by 4, e.g. $1948 = 4 \times 487$ was a leap year.
(a) 3650 (b) 3651 (c) 3652 (d) 3653
18. Below you can see the first, second, and third triangle in a sequence. How many dots will there be in the eighth triangle?

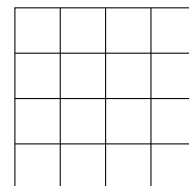


- (a) 24 (b) 28 (c) 36 (d) 45
19. Two squares with perimeter 24 cm each overlap as shown in the picture below. The points where the squares intersect are exactly half-way along a side. What is the total area of the shaded region?



- (a) 63 cm^2 (b) 9 cm^2 (c) 72 cm^2 (d) 54 cm^2

20. How many squares (of all sizes) are there in the diagram



- (a) 17 (b) 21 (c) 30 (d) 36