Spirit of Math®

GRADE 6

International Spirit of Math® Contest 2026

Releasing the Genius®



INSTRUCTIONS

1. You have **60 minutes** to write the contest
2. The contest is multiple-choice with four choices for each question.
3. Write the **CAPITAL** letter of the answer you choose on the line to the right of each question and fill in the corresponding circle on the **Contest Answer Sheet**.
4. Each question answered correctly is worth one mark, and the sum of the correct answers is the score.
5. Marks are not taken off for wrong answers.
6. **No calculators** or other counting tools are allowed.

Student Name: _____ **Score:** /40

1) What is $44 - (4 \times 4 - 4) \div 4 + 4$?

A) 40 B) 41 C) 44 D) 45 ____

2) What is the next term in the sequence: 1, 3, 6, 11, 18, …

A) 25 B) 27 C) 29 D) 31 ____

3) There are 17 students in a classroom and 39 juice boxes. After each student receives an equal number of juice boxes, there are 5 boxes left. How many juice boxes does each student get?

A) 1 B) 2 C) 3 D) 4 ____

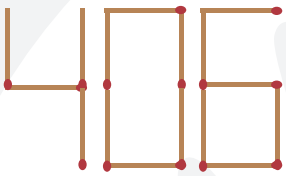
4) After replacing the battery in her broken clock, Jesse notices that it runs fast, gaining three minutes every hour. If the clock shows 8:30 p.m. when the actual time is 8:00 p.m., how long has the clock been running?

A) 5 hours B) 6 hours C) 8 hours D) 10 hours ____

5) If the side lengths of a rhombus are doubled, the ratio of its new perimeter to its old perimeter is:

A) 6:1 B) 4:1 C) 2:1 D) 1:1 ____

6) In the figure below, you cannot move any existing matches. You are asked to add exactly three matchsticks to create a larger number. What is the largest possible three-digit number you can create?



A) 989 B) 988 C) 986 D) 908 ____

7) Fill in the box: $\frac{4}{11} \square \frac{3}{10}$

A) $\leq$ B) $=$ C) $<$ D) $>$ ____

8) 5% of 20 + 20% of 5 is

A) 1 B) 2 C) 3 D) 4 ____

Space for rough work

©2026 Spirit of Math Schools Inc.

9) In the magic square below, each row, column, and diagonal have the same sum. Which number does * represent?

4		6	9
5	10		
11		13	
14	1	*	

A) 2 B) 7 C) 12 D) 17 ____

10) Which of the following statements is **true**?

I. The sum of all angles of a pentagon is 300°

II. $1^{\pi} > \pi^{1}$

III. 2^3 and 8^3 have the same units digit

IV. The square root of 25 squared is a perfect square

A) I B) II C) III D) IV ____

11) How many prime numbers are there between 1 and 50?

A) 14 B) 15 C) 16 D) 17 ____

12) Express the following as a mixed fraction: $3 + \frac{1}{\frac{1}{3} - \frac{1}{9}}$

A) $5\frac{1}{2}$ B) $6\frac{3}{4}$ C) $7\frac{1}{2}$ D) $8\frac{1}{4}$ ____

13) Zahra's fridge contains 12 potatoes, 6 carrots, and 7 pieces of celery. If Zahra picks one vegetable at random without looking, what is the probability that she picks a carrot?

A) $\frac{6}{13}$ B) $\frac{6}{25}$ C) $\frac{7}{25}$ D) $\frac{12}{25}$ ____

14) What is the sum of **all** prime factors of 756?

A) 13 B) 14 C) 19 D) 20 ____

15) Henry's uncle gives him money, increasing the amount of money in his piggy bank by 50%. After buying new shoes, the money left in the piggy bank decreases by 20%. What is the overall net change in the amount of money Henry's has?

A) 10% decrease B) 10% increase C) 20% increase D) 30% increase ____

Space for rough work

©2026 Spirit of Math Schools Inc.

16) How many different ways can you arrange the letters in the word EQUAL, including the way that spells "EQUAL"?

A) 24 B) 25 C) 120 D) 3125 ____

17) Kurama's daily route to work involves taking the subway and two buses. He is on the subway for 14 minutes and travels 12 km. The two buses take 12 and 4 minutes during which he travels 3.5 km and 1 km respectively. What was his average speed from start to finish?

A) 33 km/h B) 21 km/h C) 18 km/h D) 16.5 km/h ____

18) In her biology lab experiment, Maya observes that the bacteria doubles every minute, starting from a single cell at exactly 12:00. She watches the petri dish slowly fill, and at 12:20 the dish finally reaches full capacity. At what time was the dish only $\frac{1}{8}$ full?

A) 12:12 B) 12:17 C) 12:18 D) 12:19 ____

19) The sum of squares of four consecutive numbers is 126. What is the largest of the four numbers?

A) 6 B) 7 C) 8 D) 9 ____

20) In the addition question below, A, B, and C are three different digits. Find the value of A.

$$\begin{array}{r} A\,B \\ +\ A\,C \\ \hline B\,C\,B \end{array}$$

A) 0 B) 1 C) 2 D) 5 ____

21) A pouch contains an unknown number of yellow gems, an unknown number of blue gems, and exactly 15 purple gems. If the probability of picking a yellow gem is 40%, which is the same as the probability of picking a blue gem, how many blue gems are in the pouch?

A) 30 B) 40 C) 50 D) 75 ____

22) Starting from 17, I divide the number by 2 if it is even, otherwise I multiply the number by 3 and add 1. I keep doing this till I reach the number 1. How many steps will it take to reach 1?

A) 6 B) 9 C) 12 D) 15 ____

23) Decimals can always be written in fractional form. Express $0.1\overline{37}$ in reduced fractional form where the bar above 37 indicates 37 repeats indefinitely.

A) $\frac{37}{99}$ B) $\frac{1}{7}$ C) $\frac{12}{125}$ D) $\frac{68}{495}$ ____

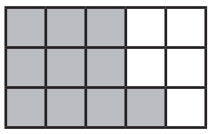
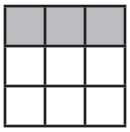
Space for rough work

©2026 Spirit of Math Schools Inc.

24) The numbers –10 to 10 (10, –10 inclusive) are written out. If the numbers –1, 0, and 1 are removed, what percent of remaining numbers are positive?

A) 33.3% B) 40% C) 50% D) 66.7% ____

25) Which of the following illustrates $\frac{3}{5} \div \frac{1}{15}$?

A)  B)  C)  D)  ____

26) The number 3113 is a palindrome because it reads the same forwards and backwards. How many 4-digit palindromes are divisible by 5?

A) 9 B) 10 C) 20 D) 25 ____

27) The diagram below is called Pascal's Triangle, where n is the row number. Following the pattern, what is the 5th number in row n = 8?

n=0: 1
n=1: 1 1
n=2: 1 2 1
n=3: 1 3 3 1
n=4: 1 4 6 4 1
n=5: 1 5 10 10 5 1
n=6: 1 6 15 20 15 6 1

A) 28 B) 56 C) 70 D) 84 ____

28) If $a \lozenge b = a^2 - ab + b^2$ and $a \blacklozenge b = a^2 + ab + b^2$, find the value of $(5 \lozenge 3) \blacklozenge 2$

A) 75 B) 291 C) 403 D) 2503 ____

29) A large pitcher contains pure tea. Next to it is a second pitcher containing the same amount of pure lemonade. A level cup of tea is poured from the tea pitcher into the lemonade pitcher and mixed thoroughly. Then a level cup of the tea–lemonade mixture (the same cup size) is poured back into the tea pitcher and mixed thoroughly. After these two transfers, which is there more of: tea in the lemonade or lemonade in the tea?

A) The amount of tea in the lemonade pitcher ____
B) The amount of lemonade in the tea pitcher
C) They are equal
D) Not enough information

Space for rough work

©2026 Spirit of Math Schools Inc.

30) A fair coin is flipped 100 times. In these flips, 58 are heads and 42 are tails. The coin is then flipped 400 more times, making 500 flips in total. How many of the last 400 flips must be tails so that, overall, there are exactly the same number of heads and tails after all 500 flips?

A) 192 B) 204 C) 208 D) 250 ____

31) Which of the following best matches the pattern below:

K	G
O	C

A)

I	E
O	A

B)

U	P
Z	L

C)

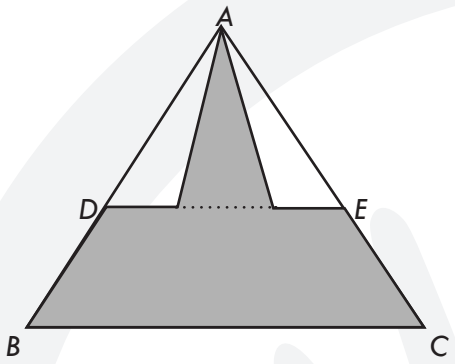
P	L
T	H

D)

N	J
Q	F

____

32) In triangle ABC, the side length of BC is 12 cm and the height from point A to BC is 10 cm. A parallel line 4 cm above the base is labelled as DE, creating a smaller shaded triangle with a base of 3 cm as shown in the figure. If the length of DE is 7.2 cm, what is the total area of the shaded region?



A) 38.4 cm^2 B) 45 cm^2 C) 47.4 cm^2 D) 51 cm^2 ____

33) In a class, the ratio of boys to girls is 3:5. If there are 16 more girls than boys, how many students are in the class?

A) 64 B) 72 C) 80 D) 96 ____

34) A person can mow a square lawn measuring 60 m x 60 m in 4 hours, working at a constant rate. How long will it take the same person, working at the same rate, to mow a square lawn measuring 15 m x 15 m?

A) 7.5 minutes B) 15 minutes C) 30 minutes D) 1 hour ____

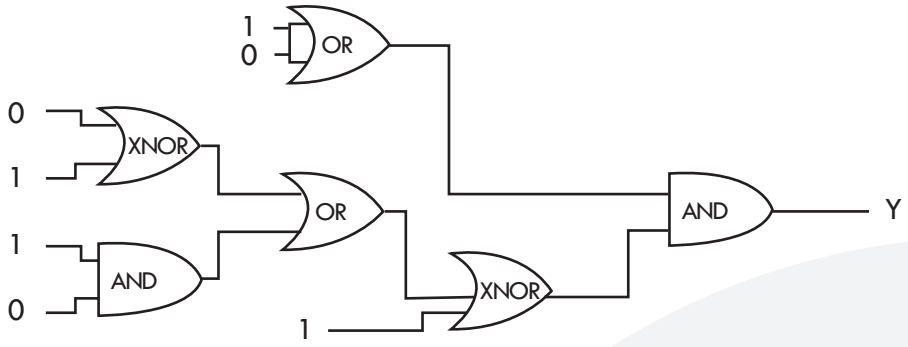
Space for rough work

©2026 Spirit of Math Schools Inc.

35) A shape is rotated 2026° clockwise about its center. This rotation has the same final position as a rotation of how many degrees counterclockwise?

A) 46° B) 134° C) 226° D) 314° ____

36) A logic gate makes a decision based on an input and provides an output of 0 or 1. The logic gate "OR" takes two inputs and will output 1 if either or both of its inputs are 1. The logic gate "AND" takes two inputs and will output 1 only when both of its inputs are 1. The logic gate "XNOR" takes two inputs and will output 1 only when both of its inputs are equal. What is the output of the rightmost logic gate?



A) –1 B) 0 C) 1 D) Not possible to determine ____

37) The product of three consecutive integers is 19656. What is the value of the smallest integer plus twice the largest integer?

A) 78 B) 82 C) 84 D) 90 ____

38) A pair of shoes and two pants cost $75 at a store. The store offers a 10% discount on each pair of shoes when two or more pairs of shoes of the same price are purchased, and a 15% discount on each pants when three or more pants of the same price are purchased. Sophie buys three pairs of pants and pays $51 in total. She then buys two pairs of shoes. How much does Sophie pay for the two pairs of shoes?

A) $55 B) $60 C) $63 D) $70 ____

39) Several years ago, the month of January had five Fridays. The sum of the calendar dates on which these Fridays fell was 85. On what day of the week did January 12th fall in that year?

A) Tuesday B) Wednesday C) Friday D) Sunday ____

40) A teacher has a certain number of stickers. When the stickers are placed into groups of 3, there are 2 stickers left over. When they are placed into groups of 4, there are 3 stickers left over. When the stickers are placed into groups of 6 and groups of 7, the numbers of stickers left over are 5 and 6, respectively. What is the smallest possible number of stickers the teacher could have?

A) 59 B) 76 C) 83 D) 90 ____

Space for rough work

©2026 Spirit of Math Schools Inc.

To promote co-operation, inspire confidence and Release the Genius® in every child.

For more information, please visit:

spiritofmathcontest.com

/spiritofmath