Spirit of Math®

Releasing the Genius®

GRADE 6

International Spirit of Math Contest 2025

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 SoM 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) $25 \times 6 \div 5 - (2 + 3) = ?$

A) 23 B) 25 C) 70 D) 150 ____

2) What is the sum of the two prime numbers between 20 and 30?

A) 44 B) 50 C) 52 D) 54 ____

3) What is the value of $\frac{7}{8} - \frac{1}{2}$?

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

4) What time will it be 335 minutes after 4:15 PM?

A) 8:50 PM B) 9:50 PM C) 10:50 PM D) 11:50 PM ____

5) At a milk factory, a small container can be filled with milk in 10 minutes and a large container in 16 minutes. If a factory machine starts filling both types of containers simultaneously, after how many minutes will the machine start to fill both type of containers at the same time?

A) 80 B) 90 C) 120 D) 160 ____

6) Your uncle is now four times older than you. If your uncle is 48 years old, what was your age five years ago?

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

7) Draw a circle and its diameter. Then, draw three discrete chords that are all perpendicular to the circle's diameter. How many non-overlapping regions do the four lines divide the circle into? Note: Perpendicular lines are lines that intersect each other at a right angle.

A) 6 B) 8 C) 9 D) 10 ____

8) A factor set consists of all numbers that can divide evenly into a given number with no remainder. For example, the factor set of 6 is {1, 2, 3, 6}. How many numbers are in the factor set of 30?

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

Space for rough work

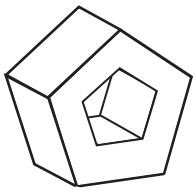
9) In the "Have Great Dreams" motel, the rooms are numbered with prime numbers only. If there are eight rooms in the motel and the rooms are numbered with prime numbers in increasing order from 2, what is the number of the last room?

A) 23 B) 19 C) 17 D) 13 ____

10) You received a pamphlet in your mailbox promoting a 15% discount on your favourite type of headphones. If the original price of the headphones is $80, how much will you save if you purchase the headphones at the discounted price?

A) $9 B) $10 C) $11 D) $12 ____

11) What is the number of faces of the figure in the diagram?



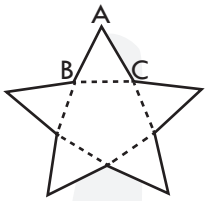
A) 7 B) 10 C) 12 D) 14 ____

12) The best freezie recipe calls for mixing two cups of concentrated juice with five cups of water. This is the equivalent to mixing which of the following?

A) Three cups of juice and ten cups of water C) Six cups of juice and eight cups of water ____

B) Six cups of juice and ten cups of water D) Eight cups of juice and twenty cups of water

13) The star on the diagram has equal side lengths and triangle ABC is an equilateral triangle. If the perimeter of the inscribed regular pentagon is 35 cm, what is the perimeter of the star?



A) 50 cm B) 70 cm C) 105 cm D) 140 cm ____

14) In a video game, your goal is to avoid the obstacles popping on the screen. If you avoid an obstacle, you earn four points. If you collide with it, you lose two points. If there are 18 obstacles and you avoid 11, what would be your final score?

A) 30 B) 32 C) 34 D) 36 ____

15) If a one-digit natural number is squared and then squared again, what could not be the result?

A) 1 B) 16 C) 64 D) 625 ____

Space for rough work

16) The sum of three different whole numbers is 99. The largest number in this sum is 34. What is the smallest number in this sum?

A) 1 B) 31 C) 32 D) 33 ____

17) If a helicopter can fly for 90 minutes on 1 full tank of gas, how many full tanks of gas does it need to fly for 6 hours?

A) 3 B) 4 C) 15 D) 60 ____

18) Mr. Ding is coaching a synchronized swimming team. Seven swimmers on the team wear red swimming suits, eight swimmers wear blue swimming suits, and three wear white. If Mr. Ding picks one swimmer at random, for a routine, what is the probability that the chosen swimmer will wear a white swimming suit?

A) $\frac{1}{6}$ B) $\frac{2}{9}$ C) $\frac{1}{3}$ D) $\frac{4}{9}$ ____

19) Zuri has two sisters. One sister is 12 years older than Zuri and the other sister is nine years younger than Zuri. If Zuri is 15, what is the average of their age?

A) 12 B) 15 C) 16 D) 18 ____

20) In the following addition question, A, B, C, and D are different digits from 0 to 9.

AB + AB = BCD

Which of the following is not a possible value of C?

A) 3 B) 4 C) 6 D) 8 ____

21) From the first 25 positive whole numbers, 5 numbers, all even, are removed. What percent of the remaining numbers are even?

A) 20% B) 25% C) 28% D) 35% ____

22) Oshin loves to draw so he has eight drawing notebooks of two different sizes. The total number of pages in all small and large notebooks is 60. Each of his small notebooks has six pages and each of the large ones has nine pages. How many small notebooks does Oshin have?

A) 3 B) 4 C) 5 D) 6 ____

Space for rough work

23) The numbers a, b, and c are such that one of them is positive, one is negative and one is equal to 0. If $\frac{(b-a)\times c}{b} < 0$, which of the following is a true statement?

A) $a > 0, b < 0, c = 0$
B) $a = 0, b < 0, c > 0$
C) $a < 0, b = 0, c > 0$
D) $a = 0, b > 0, c < 0$

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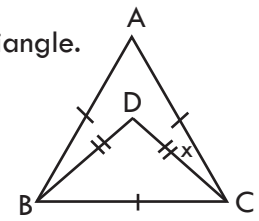
24) Triangle ABC is an equilateral triangle and triangle BCD is an isosceles triangle. The value of x is 20°. Find the measure of angle BDC.



A) 30° B) 60° C) 90° D) 100°

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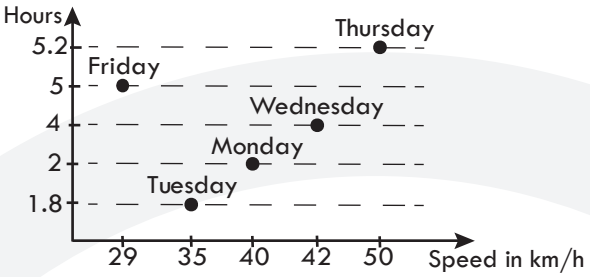
25) The diagram shows the speed and time used by one taxi driver in five days. How many more kilometers did he drive on Wednesday than on Friday?



A) 23 km B) 65 km C) 82 km D) 115 km

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26) Ms. Lo has been practicing multiplication with her students. Her original table included all multipliers and products. The multipliers were written in the shaded fields and products in the white fields. For example, $a \times b = 35$. After erasing some numbers from the original table, she ended up with the table shown. What is the value of M + N?

×	b		
a	35	63	M
		99	44
	N		404

A) 110 B) 178 C) 533 D) 541

____

27) The distance between your home to your grandmother's house is 12 km. If it takes you 60 minutes to bike to her house and back including a 20 minute visit at her place, then what would be your speed in km/h?

A) 30 B) 32 C) 35 D) 36

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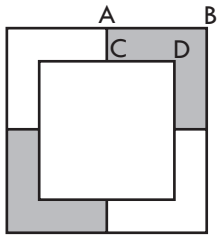
Space for rough work

28) What is the sum of the series 11 + 22 + 33 + 44 + ... + 154?

A) 1055 B) 1155 C) 2170 D) 6930 ____

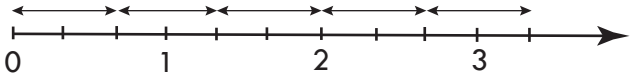
29) The side length of the larger square is 12 cm and the side length of the smaller square is 8 cm. AB and CD are half of the side lengths of the larger and the smaller square respectively.

What is the area of the shaded region?



A) 20 cm^2 B) 40 cm^2 C) 60 cm^2 D) 80 cm^2 ____

30) Which of the following is illustrated on the diagram below?



A) $\frac{10}{3} \times \frac{1}{3}$ B) $3 \times \frac{2}{3}$ C) $\frac{10}{3} \div \frac{2}{3}$ D) $\frac{10}{3} \div \frac{1}{3}$ ____

31) A counting machine is printing the following sequence : 3^1, 3^2, 3^3, ... , 3^{162}. When each term is evaluated, how many terms in this sequence have 7 as their last digit?

A) 40 B) 41 C) 42 D) 161 ____

32) How many whole numbers less than 50 can be written as the product of two or more consecutive whole numbers?

A) 6 B) 7 C) 8 D) 25 ____

33) A box with dimensions 5 cm × 5 cm × 5 cm is filled with small rectangular prisms with dimensions 5 cm × 1 cm × 1 cm. At most, how many small prisms are contained in the box?

A) 10 B) 15 C) 20 D) 25 ____

34) My dog was 100 m from home, and my cat was 80 m from home. I called them, and they both ran directly home. If my dog ran twice as fast as my cat, how far from home was my cat when my dog reached home?

A) 20 m B) 30 m C) 40 m D) 50 m ____

Space for rough work

35) Kumar's dad is arranging his tools in a toolbox. He has three identical screwdrivers, one small and one large wrench, a measuring tape, and a hammer. If all the tools are placed beside each other in the toolbox, in how many different ways can the tools be arranged? Rearranging the identical tools does not change the appearance of the tools in the box.

A) 120 B) 840 C) 1680 D) 5040 ____

36) If x and y are whole numbers, how many different pairs (x, y) satisfy the equation $2^x \times 2^y = 256$?

A) 9 B) 10 C) 11 D) 12 ____

37) When $6^3 \times 2^{188} \times 5^{192}$ is evaluated, how many digits are in the resulting number?

A) 190 B) 192 C) 194 D) 196 ____

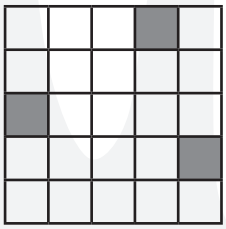
38) Jeb, Ida, Yin, and Eve all live at different coloured houses on Acorn Street. One house is blue, one is pink, one is green, and one is yellow. Their house numbers are 13, 18, 23, and 25. Ida lives in a green house. Jeb's blue house has a prime number as its house number. Yin's house number is a prime number and is not pink and Eve's house number is less than 20. Who lives at 18 Acorn Street and what colour is their house?

A) Eve, Pink house B) Ida, Green house C) Jeb, Blue house D) Yin, Yellow house ____

39) The City of Toronto is going to plant trees on one straight road in the city to promote Earth Day. Each tree is four metres away from each other. If the distance between the first tree and the last tree was 20 km, how many trees were planted in the city?

A) 4999 B) 5000 C) 5001 D) 5002 ____

40) The given diagram has three shaded squares. How many squares, of all sizes, do not include any of the three shaded squares?



A) 42 B) 34 C) 31 D) 22 ____

Space for rough work

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

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