Pi Math Contest Euler Division

First Round - 2026

INSTRUCTIONS

1. DO NOT OPEN THIS BOOKLET UNTIL YOUR PROCTOR TELLS YOU!
2. This is a 25 question test. Each question has a *single-digit* answer: 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9.
3. Before the test begins, complete all information fields on the Answer Form. Write **EULER** in the division field.
4. Write your answers to problems 1-25 clearly in the designated boxes on the Answer Form. Write numbers only (digits 0-9) and do not include units, words, or symbols.
5. Do not write outside the answer boxes, as marks outside the boxes may interfere with grading. Only answers written in the designated boxes on the Answer Form will be graded.
6. SCORING: You will receive 10 points for each correct answer, 1 point for each problem left unanswered, and 0 points for each incorrect answer.
7. Only pencils, pencil sharpeners, and erasers are allowed. Calculators are not allowed.
8. Figures are not necessarily drawn to scale.
9. When your proctor gives the signal, begin working on the problems. You will have **40 minutes** to complete the test.
10. After the exam, return your **Answer Form, Test Booklet, and scratch papers** to your proctor.
11. You should NOT discuss any aspect of the exam questions with anyone until **April 6th**. Problems and solutions to the test will be posted on the contest website after April 6th.

1. What is $4 + 4 \div 4$?

2. What is the difference between twice 9 and half of 18?

3. Simplify
$$\frac{2026 + 2026 + 2026}{1013}.$$

4. What is 20% of 50% of 10?

5. What is $14 \times 16 - 13 \times 17$?

6. How many ways are there to choose one letter from $\{A, B, C\}$ **and** one number from $\{1, 2, 3\}$?

7. How many times does the digit 2 appear when writing all the prime numbers less than 100?

8. On Halloween, Alice receives 12 candies, and each of her three friends receives 4 candies. They put all their candies together and then share them equally among the four of them. How many candies does each person receive?

9. How many different prime factors does a million have?

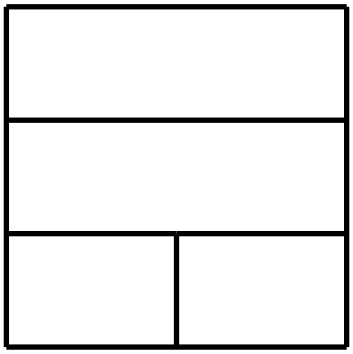
10. Five consecutive integers have a sum of 30. What is the smallest integer?

11. How many positive even factors does the number 28 have?

12. Let A be the area of a triangle with base 28 and height 12, and let B be the area of a rectangle with length 14 and height 12. What is $A - B$?

13. Eight boxes each contain 18 candies. If the candies are divided equally among 24 students, how many candies does each student receive?

14. How many rectangles of any size are in the figure below?



15. A chipmunk eats 24 acorns in 40 seconds at a constant rate. How many minutes will it take the chipmunk to eat 252 acorns at the same rate?

16. Peter begins skip-counting at 38 and continues by adding the same number each time until he reaches 134. In total, he counts 11 numbers between 38 and 134, excluding both endpoints. What is the skip-counting interval?

17. Samantha has \$35 and saves \$8 each week. Taylor has \$100 and spends \$5 each week. After how many weeks will they have the same amount of money?

18. How many integers from 1 to 31 have a units digit of 1 when squared?

19. When the product

$$5 \times 10 \times 15 \times 20 \times 25 \times 30 \times 35 \times 40$$

is written as a decimal, how many zeros are at the end of the number?

20. In how many ways can 17 be written as a sum of 2's, 3's, and 7's if the order does not matter? For example, $7+3+7$ and $3+7+7$ are considered the same.

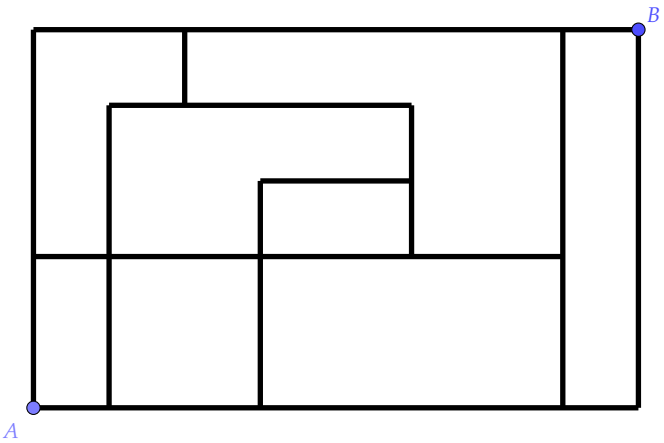
21. Anthony donates 230 books to a children's hospital. When the books are distributed equally among the children, 9 books remain. Each child receives more books than the number of children in the hospital. What is the smallest number of additional books Anthony must donate so that all the books can be distributed equally with none left over?

22. The following sequence is given:

$$a,\ b,\ c,\ 8,\ 4,\ 7,\ 5,\ 6,\ \ldots$$

After the first three terms, each subsequent term is obtained by adding the first two of the previous three terms and subtracting the third. For example, the fourth term satisfies $a+b-c=8$, and the seventh term is $8+4-7=5$.
What is a?

23. In the diagram below, all angles are right angles. How many shortest paths are there from point A to point B?



24. A jar contains 30 candies of four flavors: strawberry, chocolate, vanilla, and raspberry.

    Any 23 candies chosen from the jar include at least one vanilla candy.

    Any 26 candies chosen from the jar include at least one strawberry candy.

    Any 21 candies chosen from the jar include at least one raspberry candy.

    What is the greatest possible number of chocolate candies in the jar?

25. In the following diagram, each intersection is labeled with a digit. Starting at intersection 5, we trace each edge exactly once. At which intersection does the tracing end?