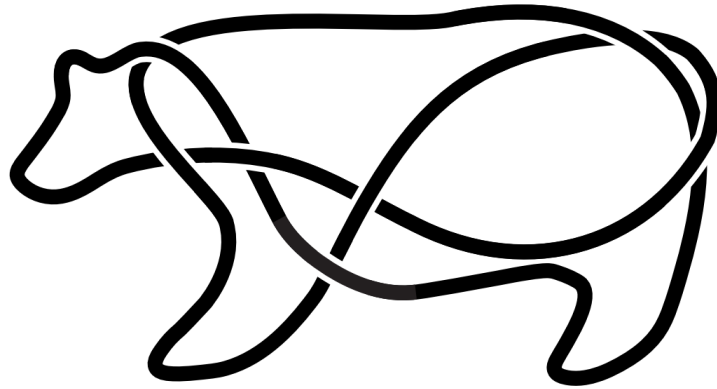


Berkeley Math Tournament 2025

General Tiebreaker



November 8, 2025

Time limit: 15 minutes.

Instructions: This tiebreaker contains 5 short answer questions. All answers must be expressed in simplest form unless specified otherwise. You will submit answers to the problem as you solve them, and may solve problems in any order. You will not be informed whether your answer is correct until the end of the tiebreaker. You may submit multiple times for any of the problems, but **only the last submission for a given problem will be graded**. The participant who correctly answers the most problems wins the tiebreaker, with ties broken by the time of the last correct submission.

No calculators. Protractors, rulers, and compasses are permitted.

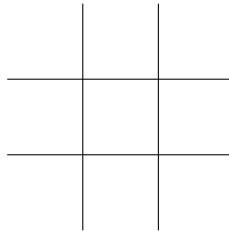
- Carry out any reasonable calculations. For instance, you should evaluate $\frac{1}{2} + \frac{1}{3}$, but you do not need to evaluate large powers such as 7^8 .
- Write rational numbers in lowest terms. Decimals are also acceptable, provided they are exact. You may use constants such as π in your answers.
- Move all square factors outside radicals. For example, write $3\sqrt{7}$ instead of $\sqrt{63}$.
- Denominators do *not* need to be rationalized. Both $\frac{\sqrt{2}}{2}$ and $\frac{1}{\sqrt{2}}$ are acceptable.
- Do not express an answer using a repeated sum or product.
- For fractions, both improper fractions and mixed numbers are acceptable.

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No calculators. Protractors, rulers, and compasses are permitted.

1. Aditya and Pico live 1000 meters apart, and they start walking toward each other's houses at the same time. Pico walks at a constant speed of 65 meters per minute. Aditya walks at a constant speed of 60 meters per minute. How many minutes after they start walking will they meet? (Do NOT include any units in your answer.)
2. The minute hand of a circular clock reaches from the center of the clock to the edge, and the hour hand is half as long as the minute hand. The circumference of the clock is 24π . What is the area of the triangle formed by the hour hand and minute hand at 4:30 AM?
3. How many ways are there to place 3 identical \bigcirc on a 3×3 tic-tac-toe board according to the following rules?
 - Each \bigcirc is in a different cell.
 - Not all three \bigcirc are in the same row, column, or diagonal.



4. Points A and B lie in the plane so that $AB = 1$. Compute the area of the region of the plane consisting of all points C such that $\angle ACB \geq 60^\circ$.
5. Find the sum of all three-digit positive integers N such that N plus the reverse of N is a perfect cube. For example, the reverses of 245 and 370 are 542 and 073 = 73, respectively.