Think Academy

2025 Sept AMC 10 Week 2 Day 1 - Classical Probability

1 If one number is chosen at random from all the positive divisors of 2025, what is the probability that this number is a perfect square?

A. 0.4 B. 0.3 C. 0.6 D. 0.7 E. 0.8

2 Assign volunteers A, B, C to classrooms numbered $1, 2, 3$ for cleaning, with exactly one volunteer in each classroom. What is the probability that A is not assigned to classroom 3?

A. $\frac{2}{3}$ B. $\frac{3}{4}$ C. $\frac{1}{4}$ D. $\frac{1}{3}$ E. $\frac{3}{5}$

3 From five line segments of lengths $2, 4, 6, 8, 10$, three are chosen at random. The probability that these three line segments can form a triangle is （ ）.

A. $\frac{1}{5}$ B. $\frac{3}{10}$ C. $\frac{2}{5}$ D. $\frac{3}{5}$ E. $\frac{7}{10}$

4 If three vertices are chosen at random from the eight vertices of a cube and connected to form a triangle, what is the probability that the triangle is equilateral?

A. $\frac{1}{7}$ B. $\frac{1}{14}$ C. $\frac{2}{7}$ D. $\frac{4}{35}$ E. $\frac{5}{14}$

5 To assess students' physical fitness, 3 items are chosen at random from a total of 7 events: 3 track and field events, 2 ball games, and 2 martial arts events. What is the probability that the chosen 3 items come from exactly two categories?

A. $\frac{22}{35}$ B. $\frac{2}{7}$ C. $\frac{4}{7}$ D. $\frac{11}{35}$ E. $\frac{33}{35}$