

2025 June AMC 10 Week1 Day 3 - Equations and Inequalities

1 What is the sum of all possible solutions of x for the equation:

$$\sqrt{x^2 + 3x + 7} - \sqrt{x^2 - 3x + 4} = 3?$$

- A. -2 B. 0 C. 3 D. 7 E. 9

2 Given that the positive integers x and y satisfy the equation $4x^2 - 9y^2 + 20x + 24y = 8$, find the value of $x + y$.

- A. 3 B. 4 C. 5 D. 6 E. 7

3 If x is a real number and $|x^2 - 25| \leq 11$, what is the difference between the maximum value of x and the minimum value of x ?

- A. 6 B. 8 C. 10 D. 12 E. 14

4 $-k - 4x + 23 > 0$ is an inequality about x and its positive integer solution is $x = 1, 2$ or 3 . What is the sum of all possible values of positive integer k ?

- A. 23 B. 27 C. 34 D. 37 E. 42

5 a and b are two real roots of the equation $2x^2 + kx - 2k + 1 = 0$. And $a^2 + b^2$ is $\frac{29}{4}$, then what is the sum of the possible value of k ?

- A. -8 B. 0 C. 3 D. 7 E. 12

AMC 10 ALGEBRA MODULE BOOTCAMP

Syllabus

- Lesson 1: Advanced Rules of Exponents
- Lesson 2: Sequences and Factorials
- Lesson 3: Algebraic Expressions and Inequalities
- Lesson 4: Equations and Functions

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