21

QUADRATICS

2002B 6. For how many positive integers n is $n^2 - 3n + 2$ a prime number?

(A) none **(B)** one **(C)** two **(D)** more than two, but finitely many

(E) infinitely many

2011A 7. Which of the following equations does not have a solution?

(A) $(x+7)^2 = 0$

(B) $|-3x| + 5 = 0$

(C) $\sqrt{-x} - 2 = 0$

(D) $\sqrt{x} - 8 = 0$

(E) $|-3x| - 4 = 0$

2006A 8. A parabola with equation $y = x^2 + bx + c$ passes through the points $(2,3)$ and $(4,3)$. What is c?

(A) 2 **(B)** 5 **(C)** 7 **(D)** 10 **(E)** 11

2008B

9. A quadratic equation $ax^2 - 2ax + b = 0$ has two real solutions. What is the average of the solutions?

(A) 1 **(B)** 2 **(C)** $\frac{b}{a}$ **(D)** $\frac{2b}{a}$ **(E)** $\sqrt{2a-b}$

2002A

10. Compute the sum of all the roots of $(2x+3)(x-4)+(2x+3)(x-6)=0$.

(A) 7/2 **(B)** 4 **(C)** 5 **(D)** 7 **(E)** 13

2002B

10. Suppose that a and b are nonzero real numbers, and that the equation $x^2 + ax + b = 0$ has solutions a and b. Then the pair (a, b) is

(A) $(-2, 1)$ **(B)** $(-1, 2)$ **(C)** $(1, -2)$ **(D)** $(2, -1)$ **(E)** $(4, 4)$

2005A

10. There are two values of a for which the equation $4x^2 + ax + 8x + 9 = 0$ has only one solution for x. What is the sum of those values of a?

(A) -16 **(B)** -8 **(C)** 0 **(D)** 8 **(E)** 20

2018A

10. Suppose that real number x satisfies

$$\sqrt{49 - x^2} - \sqrt{25 - x^2} = 3.$$

What is the value of $\sqrt{49 - x^2} + \sqrt{25 - x^2}$?

(A) 8 **(B)** $\sqrt{33} + 3$ **(C)** 9 **(D)** $2\sqrt{10} + 4$ **(E)** 12