Algebra II Practice A.REI.B.4: Using the Discriminant 2

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1. Determine whether the following equation has two real solutions, one real solution, or two complex solutions. $5x^2 + 6x + 5 = 0$

2. Determine whether the following equation has two real solutions, one real solution, or two complex solutions. $7x^2 + 13x + 3 = 0$

3. Determine whether the following equation has two real solutions, one real solution, or two complex solutions. $49x^2 + 588x + 36 = 0$

4. Determine whether the following equation has two real solutions, one real solution, or two complex solutions. $3x^2 + 7x + 1 = 0$

5. Determine whether the following equation has two real solutions, one real solution, or two complex solutions. $4x^2 + 32x + 16 = 0$

   [A] cannot be determined
   [B] one real solution
   [C] two real solutions
   [D] two complex solutions

6. Determine whether the following equation has two real solutions, one real solution, or two complex solutions. $x^2 + 2x + 6 = 0$

   [A] one real solution
   [B] two real solutions
   [C] two complex solutions
   [D] cannot be determined

7. Determine whether the following equation has two real solutions, one real solution, or two complex solutions. $7x^2 + 16x + 5 = 0$

   [A] two complex solutions
   [B] cannot be determined
   [C] one real solution
   [D] two real solutions

8. Determine whether the following equation has two real solutions, one real solution, or two complex solutions. $5x^2 + 2x + 2 = 0$

   [A] cannot be determined
   [B] two complex solutions
   [C] two real solutions
   [D] one real solution

9. What kind of solutions does $ax^2 - bx + c = 0$ have if $b^2 - 4ac < 0$?

   [A] one real solution
   [B] not enough information to tell
   [C] two real solutions
   [D] two complex solutions

10. Compare the quantities in Column A and Column B.

Column A	Column B
the value of the discriminant of $x^2 + 3x - 5 = 0$	the value of the discriminant of $x^2 - 3x + 5 = 0$

    [A] The quantity in Column A is greater.
    [B] The quantity in Column B is greater.
    [C] The quantities are equal.
    [D] The relationship cannot be determined from the information given.

[1] two complex solutions

[2] two real solutions

[3] one real solution

[4] two real solutions

[5] B

[6] C

[7] D

[8] B

[9] D

[10] A