

**A2.A.2: Using the Discriminant 2: Use the discriminant to determine the nature of the roots of a quadratic equation**

- 1 Which equation has imaginary roots?
  - 1)  $x^2 - 1 = 0$
  - 2)  $x^2 - 2 = 0$
  - 3)  $x^2 + x + 1 = 0$
  - 4)  $x^2 - x - 1 = 0$
  
- 2 Which equation has imaginary roots?
  - 1)  $x(5 + x) = 8$
  - 2)  $x(5 - x) = -3$
  - 3)  $x(x + 6) = -10$
  - 4)  $(2x + 1)(x - 3) = 7$
  
- 3 Which equation has imaginary roots?
  - 1)  $x^2 - 2x + 1 = 0$
  - 2)  $x^2 - 2x - 1 = 0$
  - 3)  $x^2 - 2x + 5 = 0$
  - 4)  $x^2 - 2x - 5 = 0$
  
- 4 Which equation has rational roots?
  - 1)  $x^2 + 8x - 8 = 0$
  - 2)  $x^2 + 8x + 9 = 0$
  - 3)  $2x^2 + 4x + 5 = 0$
  - 4)  $3x^2 + 8x + 4 = 0$
  
- 5 Which equation has real, rational, and unequal roots?
  - 1)  $x^2 + 10x + 25 = 0$
  - 2)  $x^2 - 5x + 4 = 0$
  - 3)  $x^2 - 3x + 1 = 0$
  - 4)  $x^2 - 2x + 5 = 0$
  
- 6 Which equation has roots that are real, rational, and unequal?
  - 1)  $x^2 + x + 1 = 0$
  - 2)  $x^2 - 4x + 4 = 0$
  - 3)  $x^2 - 4 = 0$
  - 4)  $x^2 - 2 = 0$

**A2.A.2: Using the Discriminant 2: Use the discriminant to determine the nature of the roots of a quadratic equation****Answer Section**

1 ANS: 3 REF: 080211b

2 ANS: 3 REF: 060518b

3 ANS: 3 REF: 068833siii

4 ANS: 4 REF: 089828siii

5 ANS: 2

$$(-5)^2 - 4(1)(4) = 9$$

REF: 011506a2

6 ANS: 3 REF: 010817b