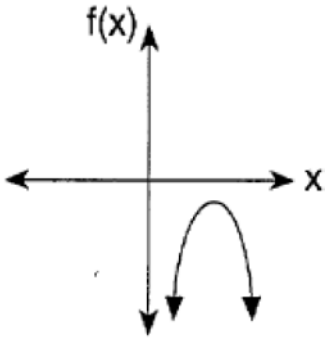
A.REI.B.4: Using the Discriminant 3

1 The accompanying diagram shows a sketch of a quadratic function, f(x).



What is the nature of the roots of the quadratic equation f(x) = 0?
1) imaginary
2) real, rational, and equal
3) real, rational, and unequal
4) real, irrational, and unequal

2 If $b^2 - 4ac < 0$, the roots of the equation $ax^2 + bx + c = 0$ must be
1) real, irrational, and unequal
2) real, rational, and unequal
3) real, rational, and equal
4) imaginary

3 If a quadratic equation with real coefficients has a discriminant of 3, then the two roots must be
1) real and rational
2) real and irrational
3) imaginary
4) equal

4 If a quadratic equation with real coefficients has a discriminant of –2, then its roots must be
1) equal
2) imaginary
3) real and irrational
4) real and rational

5 The roots of the equation $x^2 + x + 1 = 0$ are
1) real, rational, and unequal
2) real, irrational, and unequal
3) real, rational, and equal
4) imaginary

6 The roots of the equation $x^2 - 2x - 2 = 0$ are
1) real, rational, and equal
2) real, rational, and unequal
3) real, irrational, and unequal
4) imaginary

7 The roots of the equation $x^2 + 2x + 4 = 0$ are
1) real, rational, and unequal
2) imaginary and unequal
3) rational and equal
4) rational and unequal

8 The roots of the equation $x^2 + 4x + 2 = 0$ are
1) real, rational, and equal
2) real, rational, and unequal
3) real, irrational, and unequal
4) imaginary

9 The roots of the equation $x^2 + 6x + 11 = 0$ are
1) real, rational, and unequal
2) real, rational, and equal
3) real, irrational, and unequal
4) imaginary

10 The roots of the equation $x^2 - 6x + 7 = 0$ are
1) imaginary
2) real and irrational
3) real, rational, and unequal
4) real, rational, and equal

11 The roots of the equation $x^2 + 7x - 8 = 0$ are
1) real, rational, and equal
2) real, rational, and unequal
3) real, irrational, and unequal
4) imaginary

12 The roots of the equation $x^2 - 7x + 15 = 0$ are
1) imaginary
2) real, rational, and equal
3) real, rational, and unequal
4) real, irrational, and unequal

13 Which term describes the roots of the equation $2x^2 + 3x - 1 = 0$?
1) rational
2) irrational
3) equal
4) imaginary

14 The roots of the equation $2x^2 + 3x + 2 = 0$ are
1) irrational and unequal
2) imaginary
3) rational and equal
4) rational and unequal

15 The roots of the equation $2x^2 + 4x + 3 = 0$ are
1) real, rational, and unequal
2) real, irrational, and unequal
3) real, rational, and equal
4) imaginary

16 The roots of the equation $2x^2 + 6x + 5 = 0$ are
1) imaginary
2) real and irrational
3) real, rational, and unequal
4) real, rational, and equal

17 The roots of the equation $2x^2 + 3x - 5 = 0$ are
1) real, rational, and unequal
2) real, rational, and equal
3) real, irrational, and unequal
4) imaginary

18 The roots of the equation $3x^2 - 4x - 5 = 0$ are
1) real, rational, and equal
2) real, rational, and unequal
3) real, irrational, and unequal
4) imaginary

19 The roots of the quadratic equation $5x^2 - 2x = -3$ are
1) imaginary
2) real and irrational
3) real, rational, and unequal
4) real, rational, and equal

20 The roots of the equation $3x^2 - 7x = 5$ are
1) real, rational, and unequal
2) real, rational, and equal
3) real, irrational, and unequal
4) imaginary

21 The roots of the equation $-3x^2 = 5x + 4$ are
1) real, rational, and unequal
2) real, irrational, and unequal
3) real, irrational, and equal
4) imaginary

22 The roots of the quadratic equation $4x^2 = 2 + 7x$ are best described as
1) real, equal, and rational
2) real, unequal, and rational
3) real, unequal, and irrational
4) imaginary

A.REI.B.4: Using the Discriminant 3
Answer Section

1	ANS: 1	REF: 019735siii
2	ANS: 4	REF: 019628siii
3	ANS: 2	REF: 089533siii
4	ANS: 2	REF: 018528siii
5	ANS: 4	REF: 089032siii
6	ANS: 3	REF: 068424siii
7	ANS: 2	REF: 068931siii
8	ANS: 3	REF: 019928siii
9	ANS: 4	REF: 069822siii
10	ANS: 2	REF: 010234siii
11	ANS: 2	REF: 069619siii
12	ANS: 1	REF: 010022siii
13	ANS: 2	REF: 060131siii
14	ANS: 2	REF: 018629siii
15	ANS: 4	REF: 018723siii
16	ANS: 1	REF: 060222siii
17	ANS: 1	REF: 080332siii
18	ANS: 3	REF: 060334siii
19	ANS: 1	REF: 069528siii
20	ANS: 3	REF: 010326siii
21	ANS: 4	REF: 069733siii
22	ANS: 2	REF: 089732siii