Name : _____

Nature of the Roots

ES2

For the quadratic equation $ax^2 + bx + c = 0$,

If $b^2 - 4ac > 0$, the roots are real and unequal.

If $b^2 - 4ac = 0$, the roots are real and equal.

If $b^2 - 4ac < 0$, the roots are unreal(complex).

Find the nature of the roots using the discriminant.

1) $y^2 + 5y - 8 = 0$

2) $6d^2 + 7 = 0$

3) $2q^2 + 1 = 0$

= 0

5) $4r^2 - 4r + 1 =$

7) $7t^2 + 9t = 0$

8) $8w^2 - w + 3 = 0$

Name : _____

Answer key

Nature of the Roots

ES2

For the quadratic equation $ax^2 + bx + c = 0$,

If $b^2 - 4ac > 0$, the roots are real and unequal.

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If $b^2 - 4ac < 0$, the roots are unreal(complex).

Find the nature of the roots using the discriminant.

1) $y^2 + 5y - 8 = 0$

$b^2 - 4ac = 57$

The roots ar

2) $6d^2 + 7 = 0$

$\,8 < 0$

unreal(complex).

3) $2q^2 + 1 = 0$

$b^2 - 4ac = -8$

The roots ar

$= 0$

real and equal.

5) $4r^2 - 4r + 1 =$

$b^2 - 4ac = 0$

The roots ar

0

real and unequal.

7) $7t^2 + 9t = 0$

$b^2 - 4ac = 81 > 0$

The roots are real and unequal.

8) $8w^2 - w + 3 = 0$

$b^2 - 4ac = -95 < 0$

The roots are unreal(complex).