**Solve each of the following using the Quadratic Formula.**

1. 
2. 
3. 
4. 
5. 

The Discriminant: determines the number and type of roots

|  |  |  |
| --- | --- | --- |
| Value of Discriminant  b2– 4ac | Type and Number of Roots | Example of Graph of Related Function |
| b2– 4ac is positive and a **perfect square** |  |  |
| b2– 4ac is positive and is NOT a **perfect square** |  |  |
| b2– 4ac = 0 |  |  |
| b2– 4ac < 0  (a negative number) |  |  |

**Example:** Find the value of the discriminant, and then state the number and type of solutions.

1.  b) 
2.  d) 

**Example:** Find the value of k, given the equation for each of the following.

1. Two imaginary solutions
2. One real solution
3. Two real solutions

**Example:** Find the value of the discriminant, and then state the number and type of solutions.

1.  b) 

c)  d) 

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1. Two imaginary solutions
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