Algebra I
8.6 Worksheet #1
Discriminants

NAME:_____
DATE:_____ HOUR:____

Find the discriminant and determine the number of solutions.

discriminant $d = (b)^2 - 4ac$

If a quadratic has a discriminant that is **positive**, there will be ____ solution(s).

If a quadratic has a discriminant that is **negative**, there will be ____ solution(s).

If a quadratic has a discriminant that is **zero**, there will be ____ solution(s).

Example:

$x^2 - 7x = -10$ a = b = c =

d =

number of solutions: _____

1. $x^2 + 5x + 8 = 0$

a = b = c =

d =

number of solutions: _____

2. $-x^2 + 8x - 19 = 0$

a = b = c =

d =

number of solutions: _____

3. $x^2 - 3x = 7$

a = b = c =

d =

number of solutions: _____

4. $5x^2 + 4x = -5$

a = b = c =

d =

number of solutions: _____

5. $2x^2 + 8x + 8 = 0$

a = b = c =

d =

number of solutions: _____

6. $-x^2 + 4x - 5 = 0$

a = b = c =

d =

number of solutions: _____

7. $-2x^2 + 10x = 15$

a = b = c =

d =

number of solutions: _____

8. $2x^2 + 3x = 0$

a = b = c =

d =

number of solutions: _____

9. $4x^2 + x - 2 = 0$

a = b = c =

d =

number of solutions: _____

10. $4x^2 + 9 = 12x$

a = b = c =

d =

number of solutions: _____

11. $5x^2 - 5x + 2 = 0$

a = b = c =

d =

number of solutions: _____

12. $8x^2 + 5x + 2 = 0$

a = b = c =

d =

number of solutions: _____

13. $3x^2 - 5x + 4 = 0$

a = b = c =

d =

number of solutions: _____

14. $16 - 8x = -x^2$

a = b = c =

d =

number of solutions: _____

15. $x^2 + 49 = 14x$

a = b = c =

d =

number of solutions: _____

16. $2x^2 + 2x + 2 = 0$

a = b = c =

d =

number of solutions: _____