

Name: Key

### Unit 8 Day 29

### Homework – Discriminant



Find the Discriminant and State the Number of Solutions:

1.  $9x^2 - x + 3 = 0$

$$\begin{aligned} &(-1)^2 + -4(9)(3) \\ &1 + -108 \end{aligned}$$

Discriminant: -107

Number of Solutions: no real sols

2.  $x^2 - 12x + 36 = 0$

$$\begin{aligned} &(-12)^2 + -4(1)(36) \\ &144 + -144 \end{aligned}$$

Discriminant: 0

Number of Solutions: 1

3.  $2x^2 - 2x - 18 = 0$

$$\begin{aligned} &(-2)^2 + -4(2)(-18) \\ &4 + 144 \end{aligned}$$

Discriminant: 148

Number of Solutions: 2 SOLS

4.  $-x^2 - 4x + 12 = 0$

$$\begin{aligned} &(-4)^2 + -4(-1)(12) \\ &16 + 48 \end{aligned}$$

Discriminant: 64

Number of Solutions: 2 SOLS

4.  $x^2 - 4x + 16 = 0$

$$\begin{aligned} &(-4)^2 + -4(1)(16) \\ &16 + -64 \end{aligned}$$

Discriminant: -48

Number of Solutions: no real sol.

5.  $-4x^2 + 5x + 8 = 0$

$$\begin{aligned} &(5)^2 + -4(-4)(8) \\ &25 + 128 \end{aligned}$$

Discriminant: 153

Number of Solutions: 2 SOLS