Algebra I U7L1-3 Review	Name: <u>F</u>
Standard	form of a quadratic equation: OX +OX +C=
1. Square 2. Factorin 3. Quadra	til Formula (L3)
_	use the square root method. (L1)
· ·	will tell the number and types of solutions which od we use to solve if $b \neq 0$ . (L3)
	the equation has solutions.
	, the equation has solution.
	, the equation has <u>+wo</u> solutions.
o If the discriminan will be	t is a <u>perfect</u> <u>Square</u> , the solutions to solve these
	t is NOT a perfect square, the solutions will be al . Use the Quadratic Formula to
solve these equati	ons.

For the following problems, complete these steps:

- a) Find the discriminant
- b) Tell the number and type of solutions
- c) Choose the correct method to solve the equation (if there are any solutions)
- d) Find the solutions (if there are any)

1. 
$$x^2 - 18x - 40 = 0$$
  
a.  $(-18)^2 - 401(-40) = 1484$ 

- b. two rational solutions
- c. factoring d. (1 20)(x + 3) = 0

2. 
$$16x^2 = 56x$$
  $16x^3 - 56x = 0$   
a.  $(-56)^3 - 4(10)(0) = 3136$ 

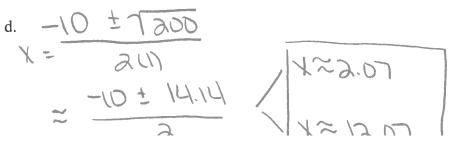
- b. two rational solutions
- c. factoring

3. 
$$x^2 + 10x - 25 = 0$$
  
a.  $(10)^3 - 401 - 25 = 200$ 

- b. two irrational sol
- c. auad. Form.

$$d. -10 \pm 7200$$

$$X = 200$$



4. 
$$x^2-1=49$$

$$4. \frac{x^{2}-1=49}{a. (0)^{3}-4(1)(-49)} = 49^{7}. \frac{1+3x=4x^{2}}{a. (3)^{3}-4(-4)(1)} = 25$$

$$-\chi(4\chi-1)+1(4\chi+1)=0$$

$$(4x-1)(-x+1)=0$$

5. 
$$6x-4=5x^2$$
  $-5x^3$   $+10x-4=0$  8.  $7x^2-105=0$ 
a.  $(10)^3-4(7)(-105)$ 

6. 
$$-4x^2 - 1 = 4x$$
  $0 = 4x^3 + 4x + 19$ .  $4x^2 + x + 6 = 12$   $4x^3 + 4x - 19 = 10$ 
a.  $(4)^3 - 4(4)(-1) = 10$ 

$$4x^2 + x + 6 = 12$$

or 
$$\chi = \frac{-4 \pm 70}{3(4)}$$
 Form d.  $\chi = \frac{-1 \pm 797}{3(4)}$   $\approx -1 \pm 9.89$ 

$$\approx -1 \pm 9.85 / 1 = 1.11$$

At what time will the rocket land on the ground?

$$0 = -10t^3 + 100t$$
  
 $0 = -10t (t - 10)$   
 $t = 0$  [ $t = 10$  secs]

11. A ball is launched into the air with an initial velocity of 64 ft/s and an initial height of 5 feet. Write an equation.

Use the discriminant to determine if the ball will reach a height of 50 feet.

12/16707 two Tyes]

$$50 = -104^{3} + 1044 + 5$$

$$(04)^{3} - 4(-10)(-45)$$

$$4090 - 2880 = 1210$$

12. Standing on the balcony, you drop a tennis ball to the gym floor below. The equation  $h(t) = -16t^2 + 15.25$  models this situation.

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What does the number 15.25 represent in this situation?

What is the starting velocity of the ball?

initial height above

How high from the ground will the ball be after 0.5 seconds?

$$h(0.5) = -10(0.5)^3 + 15.25$$

How long will it take the ball to reach the gym floor?

$$t_3 \approx 0.95$$
 $1/6t_3 = 16.95$ 
 $0 = -1/6t_3 + 16.95$ 

L = ± 0.97

[0.97 secs]