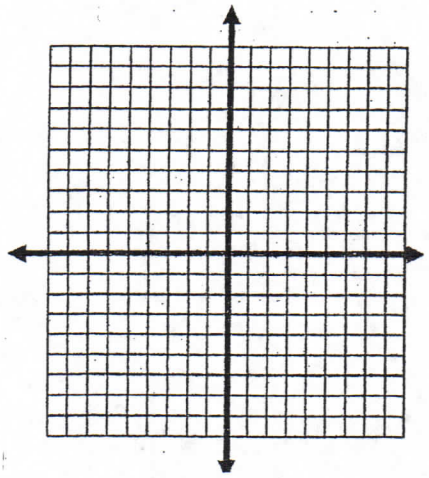
Algebra 1 Quiz 2.28.14 Radical Dude/Dudette_____

Version B period_____

1) **Simplify:** $\sqrt{3} - \sqrt{27}$

2) **Graph the quadratic** $y = 2x^2 + 2x - 3$



3) **Solve** $4x - 8 = 3(x - 5)$

4) **Solve the system of linear equations**

$$2x + y = 7$$
$$y = 1$$

5) **Area Question:** A rectangle garden has a ***length*** of $3x$ feet and a ***width*** of $(x + 7)$ feet. The ***area*** if the garden is 42 square feet (hint: **Area** = ***length*** · ***width***).

   a. Find the value of x

   b. What are the dimensions of the garden

6) **Solve by factoring or quadratic formula** $-3x^2 + 9x + 12 = 0$

Algebra 1 Quiz 2.28.14 Radical Dude/Dudette Key

Version B period

1) Simplify: $\sqrt{3} - \sqrt{27}$ $\sqrt{9}\sqrt{3} = 3\sqrt{3}$

$\sqrt{3} - 3\sqrt{3} = \boxed{-2\sqrt{3}}$

2) Graph the quadratic $y = 2x^2 + 2x - 3$

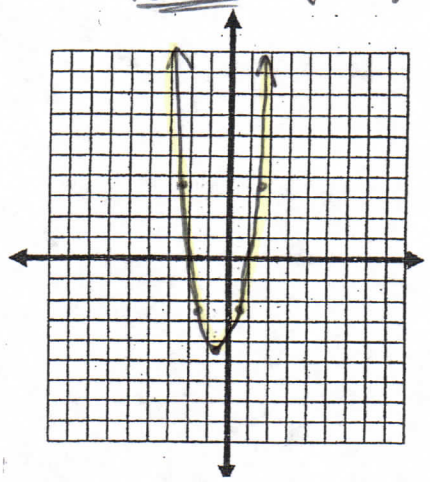
① $x = \frac{-b}{2a}$ $x = \frac{-(2)}{2(2)}$ $x = \frac{-2}{4}$ $x = -0.5$

② $y = 2(-0.5)^2 + 2(0.5) - 3 \rightarrow y = 2(-0.25) - 1 - 3$

$y = +0.5 - 1 - 3$ $y = -3.5$

③ 1 (a) = 2
3 (a) = 6
5 (a) = 10

vertex: (-0.5, -3.5)



3) Solve $4x - 8 = 3(x - 5)$

$4x - 8 = 3(x-5)$

$4x - 8 = 3x - 15$

$-3x \quad -3x$

$x - 8 = -15$

$+8 \quad +8$

$\boxed{x = -7}$

4) Solve the system of linear equations

$2x + y = 7$
$y = 1$

$y = 1$

$2x + y = 7$

$2x + 1 = 7$

$-1 \quad -1$

$\frac{2x}{2} = \frac{6}{2}$

$x = 3$

Solution: $\boxed{(3, 1)}$

5) Area Question: A rectangle garden has a ***length*** of $3x$ feet and a ***width*** of $(x + 7)$ feet. The ***area*** if the garden is 42 square feet (hint: **Area** = ***length*** · ***width***).

a. Find the value of x

b. What are the dimensions of the garden

$A = l \cdot w \rightarrow 42 = 3x(x+7)$

$42 = 3x^2 + 21x$

$-42 \quad -42$

$0 = 3x^2 + 21x - 42$

$a = 3$
$b = 21$
$c = -42$

$x = \frac{-(21) \pm \sqrt{(21)^2 - 4(3)(-42)}}{2(3)}$

$\sqrt{441 + 504} = 30.7$

$x = \frac{-21 \pm 30.7}{6}$

$x = 1.6$ $x = -8.6$

length = $3x$
$= 3(1.6)$
length = 4.8 feet

width = $x + 7$
$= (1.6) + 7$
width = 8.6 feet

6) Solve by factoring or quadratic formula $-3x^2 + 9x + 12 = 0$

$-3(x^2 - 3x - 4) = 0$

$a = 1$
$b = -3$
$c = -4$

$+1 \quad -4 \quad -3$

$-3(x+1)(x-4) = 0$

$x + 1 = 0$ and $x - 4 = 0$

$-1 \quad -1 \quad +4 \quad +4$

$\boxed{x = -1 \text{ and } x = 4}$