CTS 9a **Practice Quiz #2 - CTS** Name: Key

Directions: **Find the vertex, x-intercepts, and y-intercepts for each equation.**
If it can be factored, solve it that way.
If it can't be factored, solve it by completing the square (vertex form).
Then, use the information to graph.

1. $y = x^2 - 6x - 2$

Vertex: $(3, -11)$

X-intercepts: $3+\sqrt{11}$ and $3-\sqrt{11}$

y-intercept: $(0, -2)$

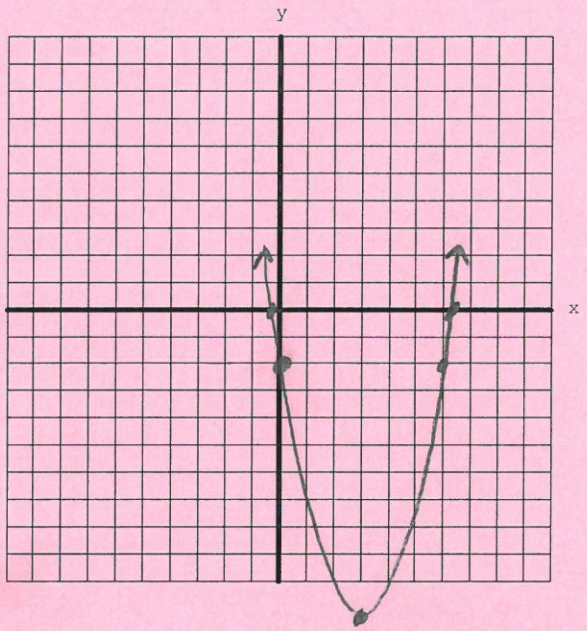
$y+2 = x^2-6x$

$y+2+9 = x^2-6x+9$

$y+11 = (x-3)^2$

$\pm\sqrt{11} = x-3$

$x = 3 \pm \sqrt{11} \approx 6.32$ & $-.32$



2. $y = 6x^2 - 23x + 7$

Vertex: $(23/12, -361/24)$

X-intercepts: $(7/2, 0)$ and $(1/3, 0)$

y-intercept: $(0, 7)$

42
-21 -2
-23

$y = 6x^2 - 21x \mid -2x + 7$

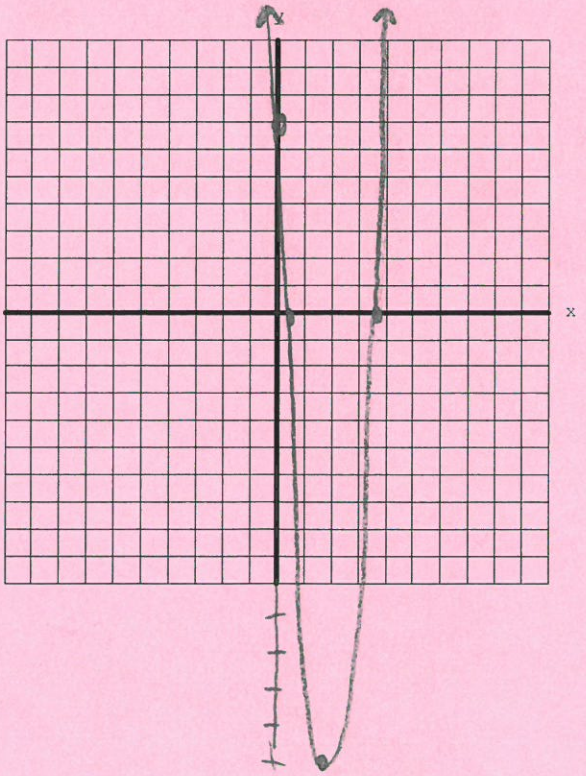
$3x(2x-7) \mid -1(2x-7)$

$0 = (2x-7)(3x-1)$

$x = 7/2 \quad x = 1/3$

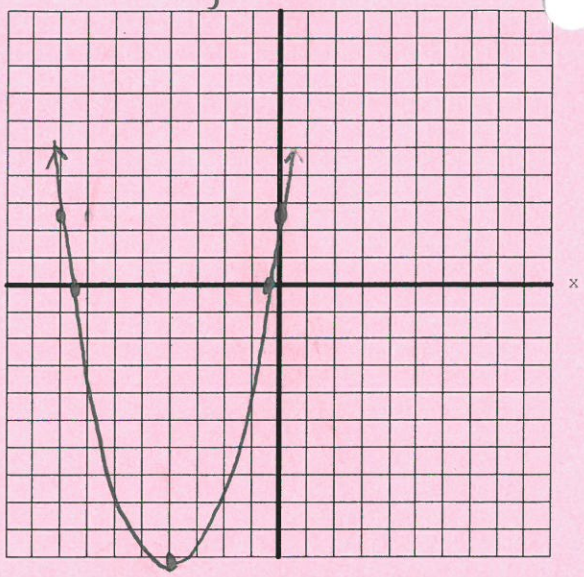
$x = -\frac{(-23)}{2(6)} = \frac{23}{12} \approx 1.92$

$y = 6(23/12)^2 - 23(23/12) + 7 = -361/24 \approx -15.04$



3. $y = x^2 + 16x + 14$

X-scale = 2
y-scale = 5



Vertex: $(-8, -50)$

X-intercepts: $-8+5\sqrt{2}$ and $-8-5\sqrt{2}$

y-intercept: $(0, 14)$

$x = -b/2a = -16/2 = -8$

$y = (-8)^2 + 16(-8) + 14 = -50$

$y = (x+8)^2 - 50$

$50 = (x+8)^2$

$\pm\sqrt{50} = x+8$

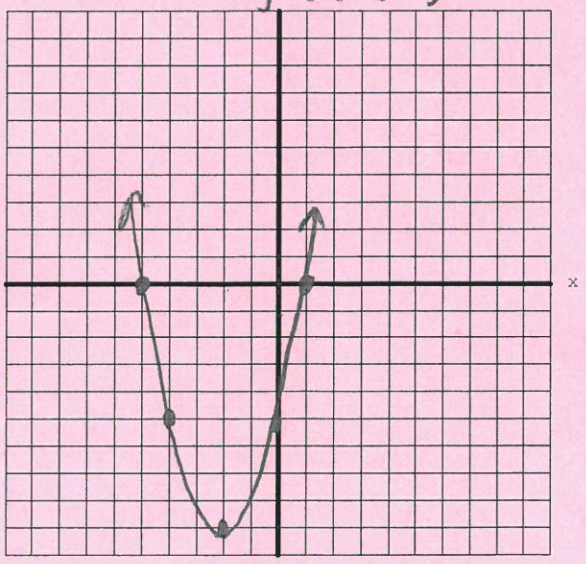
$x = -8 \pm 5\sqrt{2}$

$x \approx -.93$

$x \approx -15.07$

4. $y = 3x^2 + 12x - 15$

X-scale = 1
y-scale = 3



Vertex: $(-2, -27)$

X-intercepts: $(-5, 0)$ and $(1, 0)$

y-intercept: $(0, -15)$

$x = -12/2(3) = -2$

$y = 3(-2)^2 + 12(-2) - 15$

$y = -27$

-45
15 -3
12

$y = 3x^2 + 15x - 3x - 15$

$3x(x+5) - 3(x+5)$

$0 = (x+5)(3x-3)$

$x = -5 \quad x = 1$