abola Graphing WS Name_____

For each of the following, find the vertex, focus, directrix, and end points of the latus rectum. Also graph each parabola

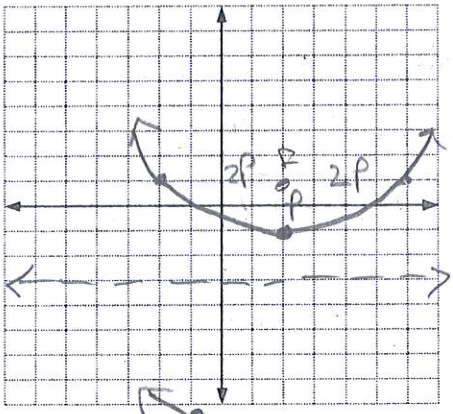
1. $(x-2)^2 = 8(y+1)$ ↷ $4p=8$ $p=2$

Vertex: $(2,-1)$

Focus: $(2,1)$

Directrix: $y=-3$

E of LR: $(6,1)$ $(-2,1)$



2. $(y-2)^2 = -16(x-3)$ ↶

$-16=4p$

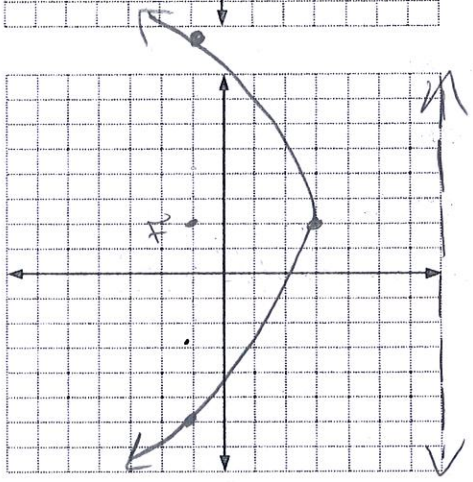
$p=-4$

Vertex: $(3,2)$

Focus: $(-1,2)$

Directrix: $x=7$

E of LR: $(1,10)$ $(-1,-6)$



3. $(x-1)^2 = 12(y-1)$ ↷

$12=4p$

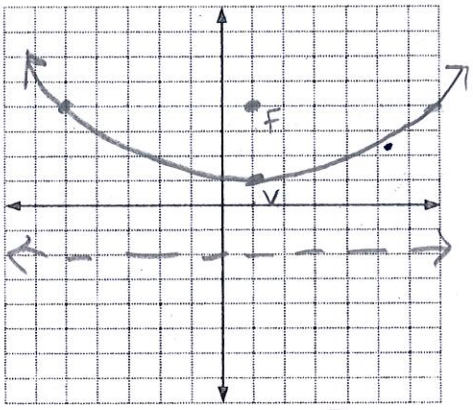
$p=3$

Vertex: $(1,1)$

Focus: $(1,4)$

Directrix: $y=-2$

E of LR: $(-5,4)$ $(7,4)$



4. $(y-4)^2 = 8(x-1)$ ↶

$8=4p$

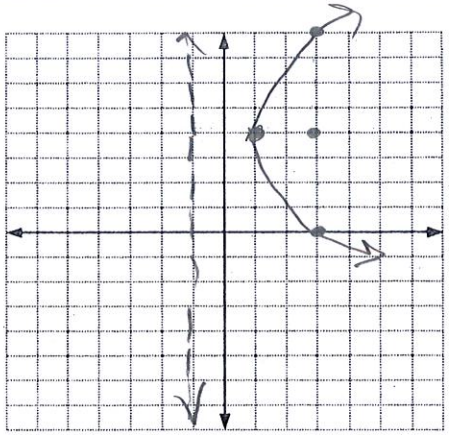
$p=2$

Vertex: $(1,4)$

Focus: $(3,4)$

Directrix: $x=-1$

E of LR: $(3,0)$ $(3,8)$



5. $2(x+2)^2 = 12y$ | $(x+2)^2 = 6y$

Vertex: $(-2, 0)$

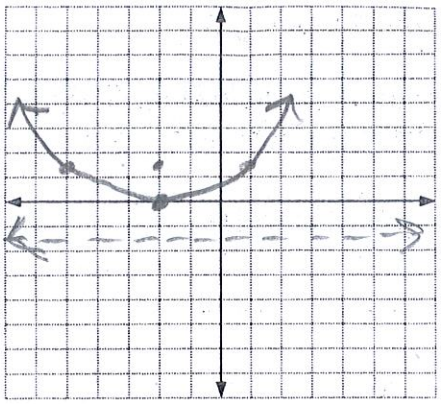
Focus: $(-2, 1.5)$

Directrix: $y = -1.5$

E of LR: $(1, 1.5)(5, 1.5)$

$4p = 6$

$p = \frac{3}{2} = 1.5$



6. $y^2 + 4(x+2) = 0$ | $y^2 = -4(x+2)$

Vertex: $(-2, 0)$

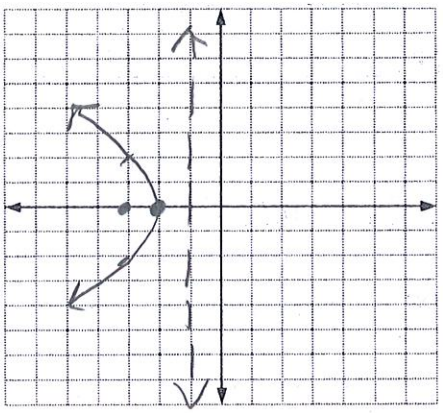
Focus: $(-3, 0)$

Directrix: $x = -1$

E of LR: $(-3, 2)(-3, -2)$

$4p = -4$

$p = -1$



7. $3(y-3)^2 = 21x$ | $(y-3)^2 = 7x$

Vertex: $(0, 3)$

Focus: $(1.75, 3)$

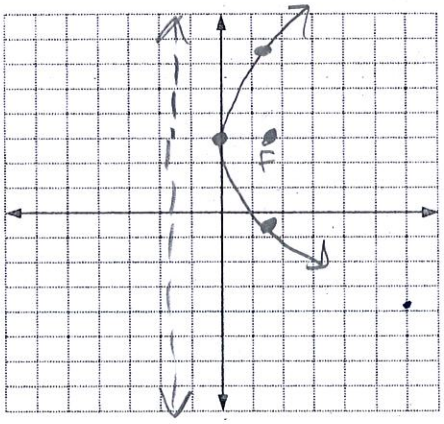
Directrix: $x = -1\frac{1}{2}$

E of LR: $(1.75, 6.5)(1.75, -.5)$

$4p = 7$

$p = \frac{7}{4} = 1.75$

$2(1.75) = 3.5$



8. $y = \frac{1}{4}(x-3)^2 + 5$

$y - 5 = \frac{1}{4}(x-3)^2$

$4(y-5) = (x-3)^2$

$(x-3)^2 = 4(y-5)$

Vertex: $(3, 5)$

Focus: $(3, 6)$

Directrix: $y = 4$

E of LR: $(1, 6)(5, 6)$

$4p = 4$

$p = 1$