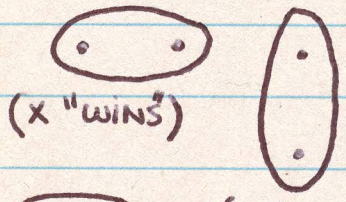
2/4/14

Ch. 10 Types of Conics

I. Four Types

Ellipse



(x "wins")

(y "wins")

$$\frac{(x-3)^2}{9} + \frac{(y+5)^2}{4} = 1$$

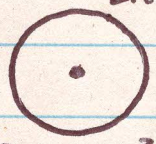
(x denominator "wins")

$$\frac{(x+6)^2}{25} + \frac{(y+4)^2}{100} = 1$$

(y denominator "wins")

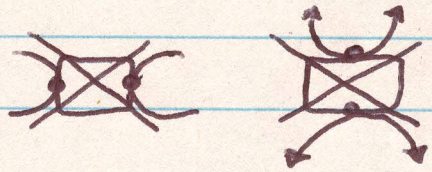
Circle

Everybody wins!!!



$$(x+3)^2 + (y-2)^2 = 9$$

Hyperbola



(x "wins") (y "wins")

$$\frac{(x-4)^2}{25} \quad \frac{(y+6)^2}{100} = 1$$

(+25) (-100)

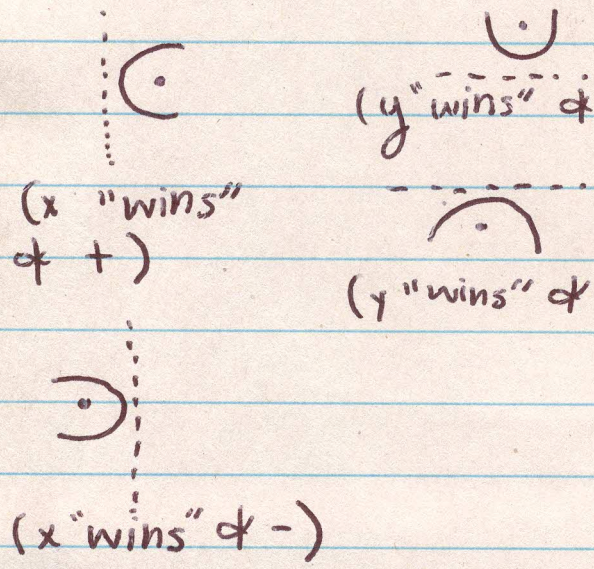
(x denominator "wins")

$$\frac{(y+7)^2}{9} - \frac{(x+2)^2}{49} = 1$$

(+9) (-49)

(y denominator "wins")

Parabola - winner isn't biggest winner is first (Not squared)



(x "wins" ∝ +)

(y "wins" ∝ -)

(x "wins" ∝ -)

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

(x "wins" ∝ +)

$$(x-6) = -\frac{1}{8}(y+2)^2$$

(x "wins ∝ -)

$$(y+4) = -\frac{1}{16}(x+2)^2$$

(y "wins" ∝ -)

$$(y-8) = 24(x+6)^2$$

(y "wins" ∝ +)