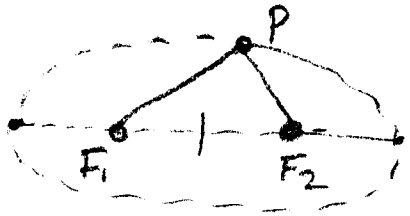
BE-Precalc Friday 11-12-10

(1.) What is the geometric definition of an ellipse? (hint: how did you draw an ellipse on the conic quiz?)

- Q3 Graded after short lesson.

Recall the definition of an ellipse:

"the set of points in a plane, the **sum** of whose distances from 2 fixed points (foci) is constant"



$\overline{F_1P} + \overline{F_2P} = \text{CONSTANT}$

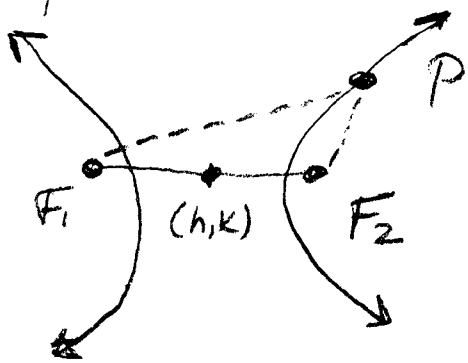
$\{2a$

{Key Property
RAYS BOUNCE FROM EACH FOCAL POINT TO THE OTHER}

$$\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$$

New definition: A hyperbola

"the set of points in a plane, the **difference** of the distances from 2 fixed points (foci) is constant.



$\overline{F_1P} - \overline{F_2P} = \text{CONSTANT}$

$$\frac{(x-h)^2}{a^2} - \frac{(y-k)^2}{b^2} = 1$$

{Key Property
RAYS headed to ONE Focus reflect to the other.}

- We will define the a, b, & c terms next week, but $c^2 = a^2 + b^2$ for hyperbolas

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- Conic Paper hyperbola exercise.

- NOTE! THESE CURVES ARE NOT two parabolas!

- Homework: Read Ch. 10-4 "Hyperbolas"