Notes: 10.6 Conic Sections in Polar Coordinates

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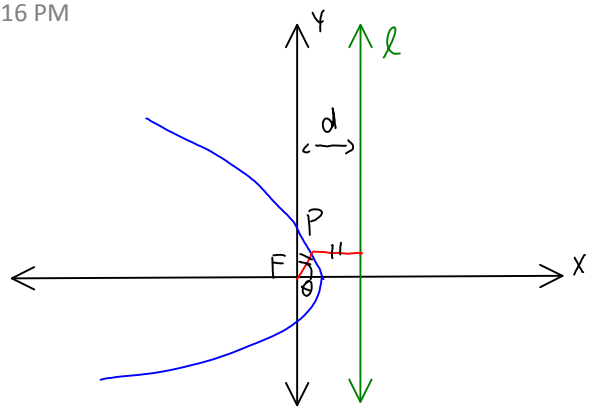
8:16 PM



$$\overline{FP} = \overline{P\ell}$$

$$\frac{\overline{FP}}{\overline{P\ell}} \equiv e \qquad \text{"eccentricity"}$$

$e = 1$ parabola
$e < 1$ ellipse
$e > 1$ hyperbola

$$\frac{r}{d - r\cos\theta} = e$$

$$r = e(d - r\cos\theta)$$
$$= ed - er\cos\theta$$
$$r + er\cos\theta = e \cdot d$$
$$r(1 + e\cos\theta) = ed$$
$$r = \frac{e \cdot d}{1 + e\cos\theta}$$