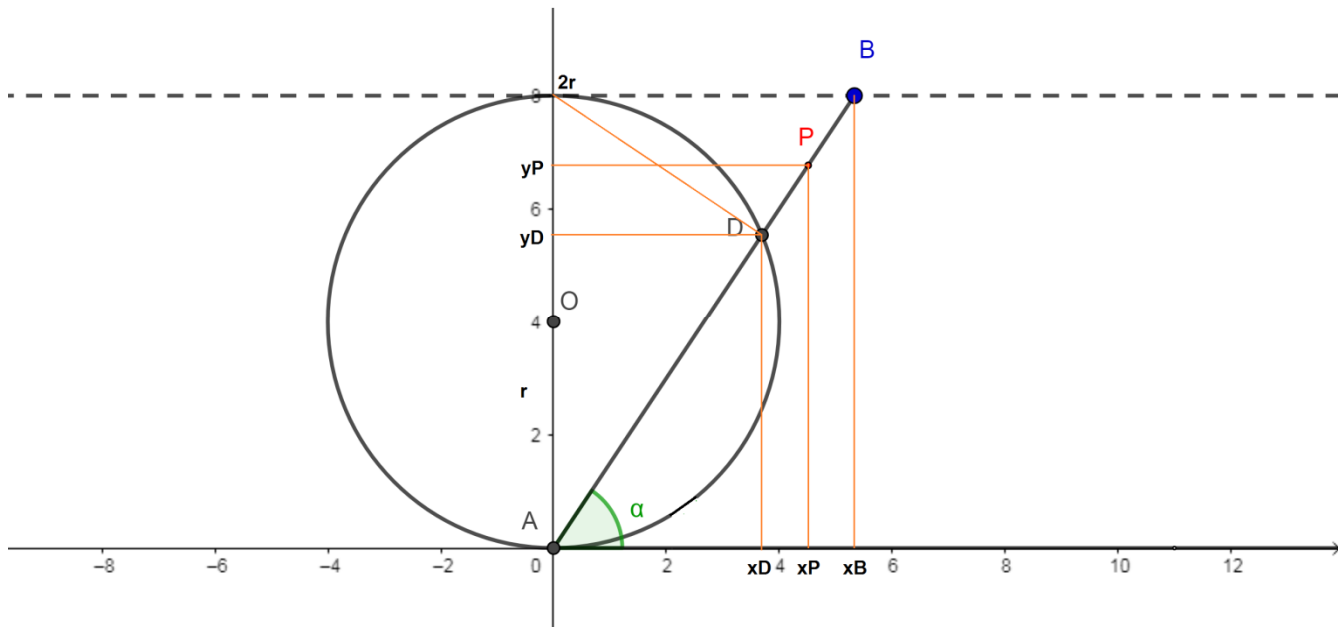


Curva de arco largo. Ecuación paramétrica.

- Se analizan y definen las coordenadas x_P e y_P que toma el punto P a medida que el ángulo α toma valores de 0 a π .



$$x_D = \overline{AD} \cdot \cos \alpha$$

$$\overline{AD} = 2r \cdot \sin \alpha$$

$$x_D = r \cdot \sin(2\alpha)$$

$$y_D = \overline{AD} \cdot \sin(\alpha) = 2r \cdot \sin^2(\alpha)$$

$$x_B = \overline{AB} \cdot \cos \alpha$$

$$\sin \alpha = 2r / \overline{AB}$$

$$x_B = 2r \cdot \cot(\alpha)$$

$$y_B = 2r$$

$$x_P = \frac{1}{2} [x_D + x_B] = \frac{1}{2} \left[\frac{2r}{\tan \alpha} + r \cdot \sin(2\alpha) \right] = \frac{r(1 + \sin^2(\alpha))}{\tan \alpha}$$

$$y_P = \frac{1}{2} [y_D + y_B] = \frac{1}{2} (2r \cdot \sin^2(\alpha) + 2r) = r(1 + \sin^2(\alpha))$$

$$x_P = \frac{r(1 + \sin^2(\alpha))}{\tan \alpha}$$

$$y_P = r(1 + \sin^2(\alpha))$$