

Matriz de rotação 2D

$$x = r * \cos \alpha$$

$$y = r * \sin \alpha$$

$$x' = r * \cos(\alpha + \beta) = r * (\cos \alpha * \cos \beta - \sin \alpha * \sin \beta)$$

$$y' = r * \sin(\alpha + \beta) = r * (\sin \alpha * \cos \beta + \cos \alpha * \sin \beta)$$

$$x' = x * \cos \beta - y * \sin \beta$$

$$y' = y * \cos \beta + x * \sin \beta$$

$$\mathbf{R} = \begin{bmatrix} \cos \beta & -\sin \beta \\ \sin \beta & \cos \beta \end{bmatrix}$$

