$$\begin{bmatrix} \sin(x) & \cos(x) \\ 2 & 3 \\ x & 0 \end{bmatrix}$$

$$\frac{1}{sin(x)} R_1 \to R_1$$

$$R_2 - (2) \cdot R_1 \to R_2$$

$$\begin{bmatrix} \sin(x) & \cos(x) \\ 0 & 3 - \frac{2\cos(x)}{\sin(x)} \\ x & 0 \end{bmatrix}$$

$$\frac{1}{sin(x)} R_1 \to R_1$$

$$R_3 - (x) \cdot R_1 \to R_3$$

$$\begin{bmatrix} \sin(x) & \cos(x) \\ 0 & 3 - \frac{2\cos(x)}{\sin(x)} \\ 0 & -\frac{x\cos(x)}{\sin(x)} \end{bmatrix}$$

$$\frac{1}{3 - 2 * cos(x)/sin(x)} R_2 \to R_2$$

$$R_3 - (-x * cos(x)/sin(x)) \cdot R_2 \to R_3$$

$$\begin{bmatrix} \sin(x) & \cos(x) \\ 0 & 3 - \frac{2\cos(x)}{\sin(x)} \\ 0 & 0 \end{bmatrix}$$