Provide a clear and organized presentation. Reduce the following quadratic form to the equation of a conic with the rotation removed. Graphically present the original axis system as well as a new coordinate axis system (our set of principal axes) and sketch this conic section. What is the angle of rotation?

$$\bar{x}^T A \bar{x} \text{ where } A = \begin{bmatrix} 13 & 3\sqrt{3} \\ 3\sqrt{3} & 7 \end{bmatrix}$$