Assignment 2

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Problems:

1. Transform the conics $x^2 + 4x + y^2 - 8y - 205 = 0$ into its standard form, and find its vertices, eccentricity, foci, equation of directrices, equation of Latus rectum, length of Latus rectum.

2. Find 3rd order partial derivatives of the following function **with respect to** x and then **convert** the point $(2, 1, 3)$ to spherical coordinate.

$$f(x, y, z) = 2x^3 y + zx + z^2 y.$$