(1) Sketch the intersection of the quadric surface given by

\[ x^2 + 2y^2 - 2z^2 + 4z + 6 = 0 \]

with the planes \( x = 0 \), \( z = 3 \), and \( z = -3 \). What type of conics are the resulting curves?

(2) Classify the quadric surface based on your answers above, and sketch the surface as best you can.