1. Use “meshgrid” to compute the surface

\[ z = e^{-\frac{1}{2}(x^2+y^2)} \]

over the ranges \( x \in [-3,3] \) and \( y \in [-3,3] \) with 100 samples in each dimension. Plot this surface using “mesh (x,y,z)”.

2. Use “repmat” to replicate the matrix

\[
A = \begin{bmatrix}
1 & 9 & 6 \\
3 & 7 & 5 \\
8 & 2 & 4
\end{bmatrix}
\]

a. Three times horizontally.

b. Four times vertically.

c. Two times horizontally and five time vertically.