MATH.2720 Introduction to Programming with MATLAB
Homework Problems on 3D Plots (Due 3/8)

1. Plot the curve given by the parametric equations
   $x = (1 + t^2)\sin(20t),\ y = (1 + t^2)\cos(20t),\ z = t$ for $-5 \le t \le 5$.
   Be sure to use lots of points.

2. Graph the surface given by $z = x^2 - y^2$ for $-3 \le x \le 3,\ -3 \le y \le 3$.

3. Graph the surface given by the parametric equations
   $x = r\cos(\theta),\ y = r\sin(\theta),\ z = 9 - r^2$ for $0 \le \theta \le 2\pi,\ 0 \le r \le 3$.