1. (5) Describe the level surfaces of \( f(x, y, z) = e^{-\sqrt{7-x^2+y^2}} \). Be sure to include all important information which may apply, such as orientation (up/down/left/right), vertex, radius, etc.

2. (5) Describe (geometrically) the level surface of \( g(x, y, z) = \frac{24}{\sqrt{x^2+y^2+z^2}} \) which contains the point \((2, 11, -10)\).
3. (3) Match the functions below with the description of their level sets.

\[ f(x, y) = (x^2 + y^2)^2 \]  
\[ g(x, y, z) = (x^2 + y^2)^3 \]  
\[ h(x, y, z) = x^2 + y^2 + z^2 \]

(A) Circles  
(B) Cones  
(C) Cylinders  
(D) Spheres  
(E) Paraboloids  
(F) None of these

4. (4) Describe the level set of \( F(x, y, z) = xyz \) which contains the point \((0, 4, -5)\).

5. (3) Is it possible for a level set of a function of three variables, \( f(x, y, z) \) to consist of a single point? If it is possible, provide an example of such a function. If it is not possible, explain why not.