# ING FAHD UNIVERSITY OF PETROLEUM AND MINERALS <br> DEPARTMENT OF MATHEMATICS \& STATISTICS <br> MATH 201-05 <br> Quiz \# 3 <br> April 12, 2010 

NAME: $\quad$ ID\#:

## SHOW ALL YOUR WORK

1. Identify (2pts) and sketch (2pts) the surface $y=\sqrt{1+x^{2}-z^{2}}$.
2. (a) Change ( $\mathbf{2 p t s}$ ) $\left(\sqrt{3}, \frac{\pi}{3},-1\right)$ From cylindrical to spherical coordinates.
(b) Change the equation $x=3$ into Spherical coordinates ( $2 \mathbf{p t s}$ ).
3. (2pts) Identify and sketch the surface $r^{2}=r$.
