

Name:

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Discussion Section - No:

Time:

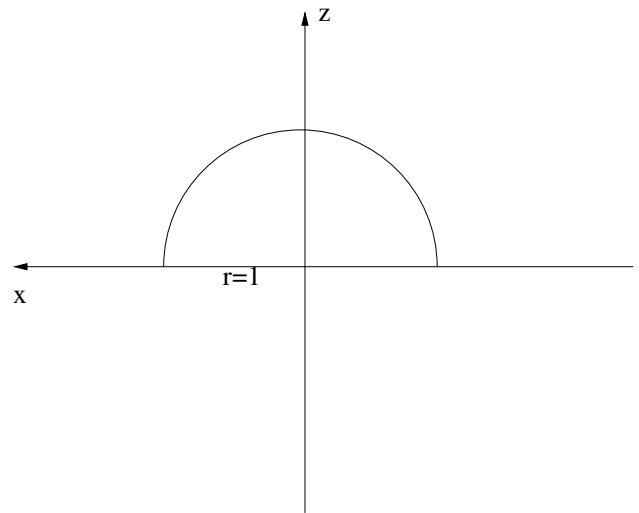
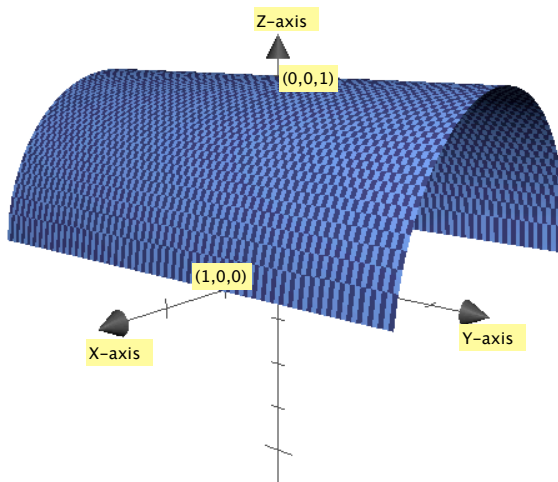
TA's name:

### Quiz 2, Math 10C - Lecture A (Winter 2007)

Duration: 20 minutes

Please close your books, turn your calculators off and put them away. You can use one page of notes. To get full credit you should support your answers.

1. The surface with the circular vertical cross-sections of radius 1 centered at  $(x, z) = (0, 0)$  when  $y$  is fixed is a cylinder that extends infinitely along the  $y$ -axis. The part of this cylinder on or above the  $xy$ -plane (whose graph and vertical cross-section on the plane  $y = 0$  are plotted below on the left and right, respectively) is a function  $z = f(x, y)$  of  $x$  and  $y$ .



- a) (3 points) Determine the domain and range of  $f$ .

**b) (2 points)** Find an algebraic formula for  $f$ .

**c) (3 points)** Plot the contour diagrams of  $f$ .