

Math 1450, Honor Calculus Practice10, Fall 2016.

October 14, 2016

PSID: \_\_\_\_\_ Name: \_\_\_\_\_

- (1) Let  $V$  be the volume of the solid obtained by rotating about the  $y$ -axis the region between  $y = x$  and  $y = x^2$ .
  - (a) Find  $V$  by method of the cylindrical shells.
  - (b) Find  $V$  by washer method.

- (2) Let  $V$  be the volume of the solid obtained by rotating about the x-axis the region bounded  $x = 1 + y^2$  and  $x = 0, y = 1, y = 2$ .
- (a) Find the integral by method of the cylindrical shells for  $V$ .
  - (b) Find the integral by washer method for  $V$ .
  - (c) Based on (a) and (b), which method will you prefer to find  $V$  ?

- (3) Let  $V$  be the volume of the solid obtained by rotating about the x-axis the region bounded  $y = 4 - x^2$  and  $y = 0$ .
- (a) Find the integral by method of the cylindrical shells for  $V$ .
  - (b) Find the integral by washer method for  $V$ .
  - (c) Based on (a) and (b), which method will you prefer to find  $V$  ?