

20 pts

232 Quiz 4

Name: _____

April 25, 2014

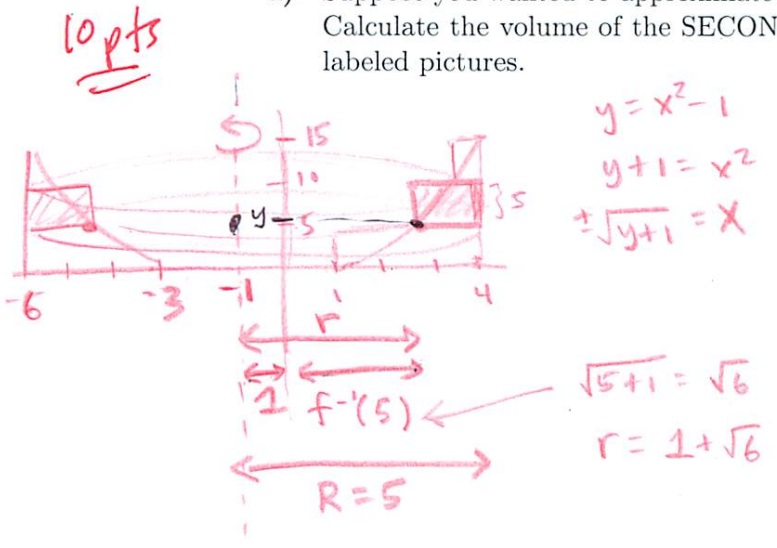
Name: * key *

Name: _____

Work in groups. You must do all problems together, discussing and agreeing on each answer; do not split up the work. Hand in one copy of the quiz with a very clear, concise writeup. You may use your Notebooks.

1. Consider the solid of revolution obtained by rotating the region between the graph of $f(x) = x^2 - 1$ and the x -axis on $[1, 4]$ around the line $y = 6$. (x = -1)

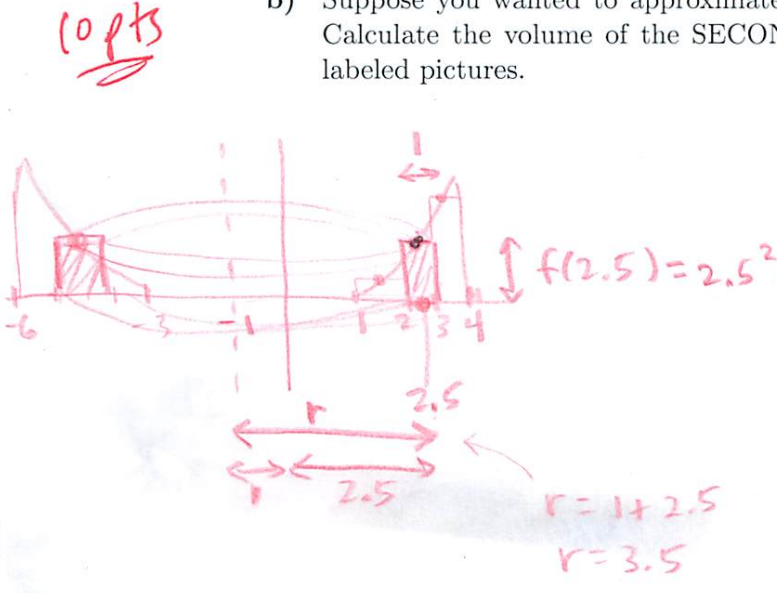
a) Suppose you wanted to approximate the volume of this solid with three washers. Calculate the volume of the SECOND washer only. Show your work with clear, labeled pictures.



$$V_2 = \pi (5^2 - (1 + \sqrt{6})^2) (5)$$

// could have drawn initial rectangle differently

b) Suppose you wanted to approximate the volume of this solid with three shells. Calculate the volume of the SECOND shell only. Show your work with clear, labeled pictures.



$$V_2 = 2\pi (3.5)(2.5^2 - 1)(1)$$

// ditto