Dawson College: Calculus II (SCIENCE): 201-NYB-05-S09: Winter 2013

Name: Y. Lamontagne
Student ID: _____

Quiz 9

This quiz is graded out of 10 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

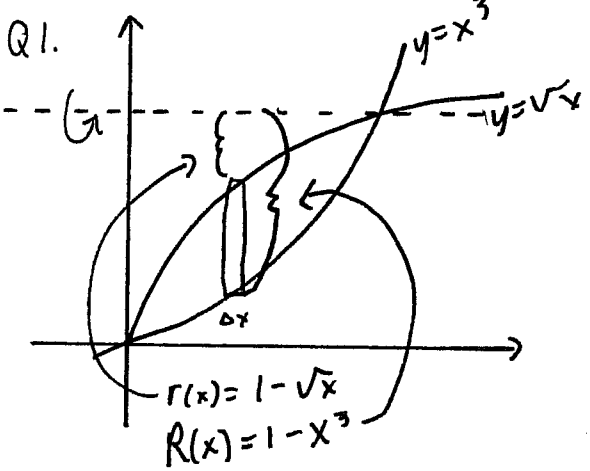
Question 1. *(5 marks)* §7.2 #18 The region enclosed by the given curves is rotated about the specified line. Find the volume of the resulting solid.

$y = x^3$, $y = \sqrt{x}$; about $y = 1$

Question 2. *(5 marks)* §7.3 #26 Set up an integral for the volume of the solid obtained by rotating the region bounded by the given curves about the specified axis.

$x = 4$, $x^2 - y^2 = 7$; about $y = 5$

Q1.

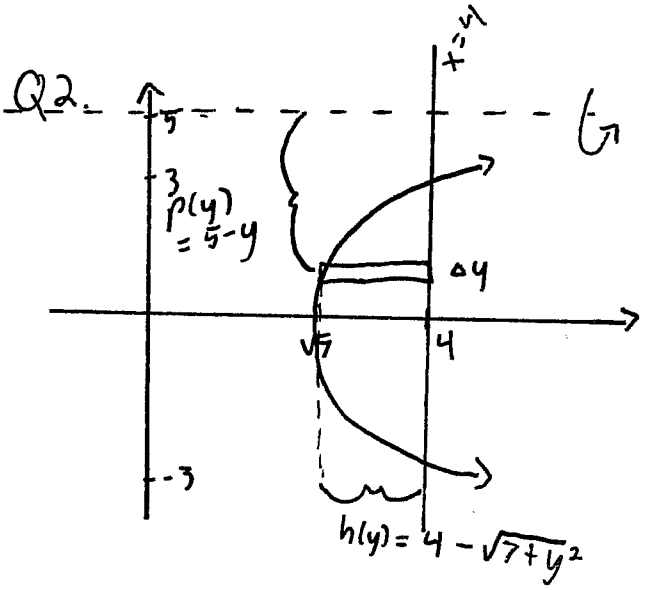


$$\Delta V = \pi\left[(R(x))^2 - (r(x))^2\right]\Delta x$$

$$V = \int_0^1 \pi\left[(1-x^3)^2 - (1-\sqrt{x})^2\right]dx$$

$$= \ldots = \frac{10\pi}{21}$$

Q2.



$$\Delta V = 2\pi\, p(y)\, h(y)\, \Delta y$$

$$V = \int_{-3}^{3} 2\pi(5-y)(4-\sqrt{7+y^2})\,dy$$