

# Quiz 2

Math 1572H, 2 February 2006

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WARNING: THIS QUIZ HAS TWO SIDES

1. [4 points] Evaluate the integral

$$\int \frac{6x^2 - 9x + 9}{x^3 - 3x^2} dx.$$

2. [2 points] Let  $S_n$  be the approximation to the integral

$$\int_1^3 2(x-3)^2 dx$$

using Simpson's Rule by dividing the interval  $[1, 3]$  into  $n$  parts. We assume that  $n$  is a positive, even integer (so  $n \geq 2$ ). What is the minimal value for  $n$  so that the error

$$\left| S_n - \int_1^3 2(x-3)^2 dx \right| < 0.01?$$

[BIG HINT: How is Simpson's Rule derived? You should not need to compute the values of any function.]

There is a question on the other side.

3. [4 points] Evaluate the integral

$$\int_0^{\pi/2} x \cos x \, dx.$$