MATH 275 – Section 003 – Quiz 6

You may work with other class members on this quiz, but you may not receive assistance from people not in MATH 275 (Section 003). You must show all of your work to receive full credit. Do all your work on other sheets of paper and be sure to staple all the pieces of paper together or YOU WILL GET A ‘ZERO’ ON THE QUIZ. Do not use decimal approximations unless asked to do so. Your work on this quiz must be handed in by Monday, 15 November 2004 at 1900. GOOD LUCK!

1) Evaluate
\[ \iint_R \frac{y^3}{x} \, dA, \]
where \( R \) is the region in Quadrant I bounded by \( xy = 1 \), \( xy = 4 \), \( y = x \), and \( y = 2x \).

2) Evaluate
\[ \int_C x \, ds, \]
where \( C \) is the parabola \( y = x^2 \) from the point \((0, 0)\) to the point \((2, 4)\). Relate your answer, the curve \( C \), and the integrand \( x \) to the fence model we discussed in class when we began studying line integrals.

3) Evaluate
\[ \int_C (x - 1) \, e^y \, ds, \]
where \( C \) is the line segment from the point \((1, 2, 3)\) to the point \((-5, 5, 5)\).