Practice test 1

Time: 50 minutes

- 1. A rectangular field will have one side made of a brick wall and the other three sides made of wooden fence. Brick wall costs \$20 per meter, whilst wooden fence costs \$40 for 4 meters. The area of the field is to be $2,400m^2$. What lengt should the brick wall be to give the lowest total cost of wall plus fence?
- 2. Evaluate the integral $\int_0^2 (5^{\frac{x}{2}} 5x) dx$.
- 3. If $f'(x) = 4x^3 \frac{1}{x}$, and f(1) = 1, what is f(x)?
- 4. You already know that the area under the graph of $y = x^2$ between 0 and 1 is 1/3. Find the first three Riemann sums R_1, R_2, R_3 which approximates this value.
- 5. What is the average value of x^2 between 0 and 2?