MATH 170 – Section 004 – Quiz 12

You may work with other class members on this quiz, but you may *not* receive assistance from people not in MATH 170 (Section 004). 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, 28 April 2003 at 11:40 a.m. GOOD LUCK!

1) Use the techniques discussed in Sections 5.1 and 5.2 of the text to evaluate

$$\int_2^7 (x^2 + 2x + 3)\, dx,$$

or, in other words, find the area under the graph of $y = x^2 + 2x + 3$ (and above the x-axis) on the interval $[2, 7]$.

2) Express the limit

$$\lim_{n\to\infty} \left(\sum_{i=1}^{n} \frac{3}{n} \sin\left(\frac{9i}{n} - 3 \right) \right)$$

as an integral of the form

$$\int_a^b f(x)\, dx.$$