Sample Exam 1 Solutions - Math 129 - Fall 05 -Kennedy
NOTE: I only give answers here. On the exam be sure to show your work.

1.
$$\frac{1}{4}(2 + \sin\theta)^4 + C \tag{1}$$

2.
$$\frac{-1}{45}[7\cos(7x)\sin(2x) - 2\sin(7x)\cos(2x)] \tag{2}$$

3.
$$x\sin^{-1}(x) + \sqrt{1 - x^2} + C \tag{3}$$

4.
$$\sin^{-1}(\frac{x-1}{2}) + C \tag{4}$$

5. (a)
$$\frac{1}{2k}\left(1 - \exp(-kT^2)\right) \tag{5}$$

(b) $\frac{1}{2k}$

6. LEFT=30, RIGHT=31. TRAP is their average which is 30.5.

7. (a) Top choice is the correct one.
(b) $A = 1, B = -1, C = -2$.

8. It converges. The easiest way to do this is to use the comparison theorem. $e^{-x}(1 + \cos x) \le 2e^{-x}$. Since

$$\int_0^\infty 2e^{-x}\,dx \tag{6}$$

converges the orginal integral does too. Note that this solution is a 7.8 method and that section is not on our exam. The other way to do this problem is to use the table to find the antiderivate. Then you can actually compute the value of the integral.

9. A is TRAP, B is LEFT, C is SIMPSON, D is RIGHT.