BC CALCULUS PRACTICE 8.2 **Name:** _____ **Period** _____

Aisle _____ pg 520; 3, 7, 9, 11, 17, 21, 23, 29, 35, 41b, 43-53 odd, 55a

Show all necessary work neatly.

Evaluate the integrals.

3. $\int x^2 e^x \, dx$	7. $\int x^2 \cos x \, dx$
9. $\int x \ln x \, dx$	11. $\int (\ln x)^2 dx$
17. $\int \tan^{-1} 3x \, dx$	21. $\int e^{ax} \sin bx \, dx$
23. $\int \sin(\ln x) \, dx$	29. $\int_0^2 xe^{2x} \, dx$

35. $\int_2^4 \sec^{-1}\sqrt{\theta}\, d\theta$

41b. Integrate by first making a u-sub, then by parts.

$\int \cos\sqrt{x}\, dx$

43.

$\int (3x^2 - x + 2)e^{-x} dx$

45.

$\int 4x^4 \sin 2x\, dx$

47. Evaluate $\int \sin x \cos x\, dx$

(a) by parts

(b) using u-sub with $u = \sin x$

49.

(a) Find the area of the region enclosed by $y = \ln x$, the line $x = e$, and the x-axis.

(b) Find the volume of the solid generated when the region in part (a) is revolved about the x-axis.

51.

Find the volume of the solid generated when the region between $y = \sin x$ and $y = 0$ for $0 \leq x \leq \pi$ is revolved about the y-axis.

53. Ad particle moving along the x-axis has velocity function $v(t) = t^3 \sin t$. How far does the particle travel from time $t = 0$ to $t = \pi$?

55a. Use the reduction formula to evaluate $\int sin^4 x \, dx$.