

/ Ch. 8 BC ch. 8.2 p. 532 #59-69 all

60)  $-\frac{1}{8}e^{-2x}(4x^3+6x^2+6x+3)+C$

62)  $\frac{1}{8}[4x^3\sin 2x + 6x^2\cos 2x - 6x\sin 2x - 3\cos 2x]+C$

64)  $\frac{2}{315}(x-2)^{5/2}(35x^2+40x+32)+C$

66)  $x^2\sin(x^2) + \cos(x^2)+C$

68)  $e^2+1$

35)  $\int e^{2x}\sin x dx$       $u=e^{2x}$       $dv=\sin x dx$   
     $du=2e^{2x} dx$       $v=-\cos x$

LIPET

$uv - \int v du$

$-\cos x e^{2x} - \int -\cos x \cdot 2e^{2x} dx$

$u=2e^{2x}$       $dv=\cos x$   
 $du=4e^{2x} dx$       $v=+\sin x$

\* multiple of the original integral reappears.

$\int e^{2x}\sin x dx = -\cos x e^{2x} + 2e^{2x}\sin x - \int 4e^{2x}\sin x dx$

$5 \int e^{2x}\sin x dx = -\cos x e^{2x} + 2e^{2x}\sin x$

$\int e^{2x}\sin x dx = \frac{1}{5}(-\cos x(e^{2x}) + 2e^{2x}\sin x + C)$