CALCULUS
Integration by substitution:
Problems
OLD

0670-1. a. Compute $\int e^{3x+4}\,dx$ by making the substitution $u = 3x + 4$.

b. Check your answer by differentiating.

0670-2. a. Compute $\int xe^{3x^2+4}\,dx$ by making the substitution $u = 3x^2 + 4$.

b. Check your answer by differentiating.

0670-3. a. Compute $\int \dfrac{x\,dx}{3 + 5x^4}$ by making the substitution $u = x^2\sqrt{5/3}$.

b. Check your answer by differentiating.

0670-4. Evaluate $\int xe^{x^2}\,dx$.

0670-5. Evaluate $\int xe^{-x^2/2}\,dx$.

0670-6. Evaluate $\int x^2(x^3+4)^{100}\,dx$.

0670-7. Evaluate $\int [x+3][\cos(x^2+6x+4)]\,dx$.

0670-8. Evaluate $\int \dfrac{\sin(\ln x)}{x}\,dx$.

0670-9. Evaluate $\int \left(\sec^5 x\right)(\tan x)\,dx$.

0670-10. Evaluate $\displaystyle\int_{3}^{5} x e^{x^2}\, dx$.

0670-11. Evaluate $\displaystyle\int_{\pi/4}^{\pi/3} \left(e^{\tan x}\right)\left(\sec^2 x\right)\, dx$.

0670-12. Evaluate $\displaystyle\int_{\pi/3}^{\pi/4} \left(e^{\tan x}\right)\left(\sec^2 x\right)\, dx$.

0670-13. Evaluate $\displaystyle\int_{5}^{7} \frac{e^{2/x}}{x^2}\, dx$.

0670-14. Evaluate $\displaystyle\int_{e}^{e^5} \frac{1}{x(\ln x)^2}\, dx$.

0670-15. Evaluate $\displaystyle\int_3^5 xe^{x^2}\,dx$.

0670-16. Evaluate $\displaystyle\int_{\pi/4}^{\pi/3} \left(e^{\tan x}\right)\left(\sec^2 x\right)\,dx$.

0670-17. Evaluate $\displaystyle\int_0^{\pi/2} (1 + \cos^3 x)(\sin x)\,dx$.

0670-18. Evaluate $\displaystyle\int_5^7 \frac{e^{2/x}}{x^2}\,dx$.

0670-19. Evaluate $\displaystyle\int_e^{e^5} \frac{1}{x(\ln x)^2}\,dx$.