# Integration Drill

*Evaluate the following definite and indefinite integrals:*

(1) $\displaystyle\int (2x+3)\,dx$

(2) $\displaystyle\int_0^5 (1+2x^3)\,dx$

(3) $\displaystyle\int_0^1 e^{\pi}\,dt$

(4) $\displaystyle\int_{-2}^0 (u^5-u^3+u^2)\,du$

(5) $\displaystyle\int \sqrt[5]{x^2}(3x^3+2x^2)\,dx$

(6) $\displaystyle\int_{-1}^0 (2t-e^t)\,dt$

(7) $\displaystyle\int_{\pi}^{2\pi} \cos x\,dx$

(8) $\displaystyle\int (3y+2)^2\,dy$

(9) $\displaystyle\int_0^1 (4t^3-t)(2t+5)\,dt$

(10) $\displaystyle\int_{-2}^{-1} \left(4y^3+\frac{2}{y^3}\right)\,dy$

(11) $\displaystyle\int x^{1/2}(2x^{2/3}-3x^{-3/4})\,dx$

(12) $\displaystyle\int_1^2 \frac{t+5t^7}{t^3}\,dt$

(13) $\displaystyle\int_1^9 \frac{3x-2}{\sqrt{x}}\,dx$

(14) $\displaystyle\int_0^{\pi/4} \sec^2 s\,ds$

(15) $\displaystyle\int (2e^u+\cos u)\,du$

(16) $\displaystyle\int (5a^2+4b^3)\,dx$

(17) $\displaystyle\int_1^9 \frac{1}{2x}\,dx$

(18) $\displaystyle\int_0^1 10^t\,dt$

(19) $\displaystyle\int_{1/2}^{\sqrt{3}/2} \frac{6}{\sqrt{1-y^2}}\,dy$

(20) $\displaystyle\int \frac{4}{x^2+1}\,dx$

(21) $\displaystyle\int_{\pi/4}^{\pi/3} \sec\theta\tan\theta\,d\theta$

(22) $\displaystyle\int_{-1}^1 e^{u+4}\,du$

(23) $\displaystyle\int_0^1 (1+x^2)^3\,dx$

(24) $\displaystyle\int_0^{\pi/4} \frac{1+\cos^2 x}{\cos^2 x}\,dx$

(25) $\displaystyle\int \frac{\sin\theta+\sin\theta\tan^2\theta}{\sec^2\theta}\,d\theta$