Calculus Assignment # 2

Evaluate each of the following integrals please.

(1) $\int \sin(3x)\,dx$

(2) $\int \cos(2x + 4)\,dx$

(3) $\int \sec^2(5x - 1)\,dx$

(4) $\int \sec(2x)\tan(2x)\,dx$

(5) $\int \csc\left(x + \frac{\pi}{2}\right)\cot\left(x + \frac{\pi}{2}\right)\,dx$

(6) $\int \csc^2(2x - 3)\,dx$

(7) $\int x\sin\left(2x^2\right)\,dx$

(8) $\int \frac{\cos\sqrt{x}}{\sqrt{x}}\,dx$

(9) $\int \left(3\sin(5t) - 5\cos(2t)\right)\,dt$

(10) $\int \left(2\sin(3x)\cos(3x)\right)\,dx$

(11) $\int \left(\sin^2(2x)\cos(2x)\right)\,dx$

(12) $\int \left(\sin(5x)\cos^3(5x)\right)\,dx$

(13) $\int \sec^2(2\theta)\,d\theta$

(14) $\int \left(\sec^2(2\theta)\tan(2\theta)\right)\,d\theta$

(15) $\int \frac{d\theta}{\sin^2(\theta)}$

(16) $\int \csc^2(5\theta)\cot(5\theta)\,d\theta$

(17) $\int \cos^2(2y)\,dy$

(18) $\int \sin^2\left(\frac{x}{2}\right)\,dx$

(19) $\int \left(1 - \sin^2(3t)\right)\cos(3t)\,dt$

(20) $\int \sqrt{2 + \sin(5t)}\cos(5t)\,dt$

(21) $\int \left[\sec(x)\left(\sec(x) + \tan(x)\right)\right]\,dx$

(22) $\int \left\{\sin(x)\cos(x)\left[\sin(x) + \cos(x)\right]\right\}\,dx$

(23) $\int \left(\frac{\sin(2t)}{\sqrt{2 - \cos(2t)}}\right)\,dt$

(24) $\int \tan^2(7x)\,dx$

(25) $\int \left[\tan^3\left(\frac{2x}{3}\right)\sec^2\left(\frac{2x}{3}\right)\right]\,dx$

(26) $\int \sin^4(x)\cos(x)\,dx$

(27) $\int \sin^4(x)\cos^3(x)\,dx$

(28) $\int \sin^3(4x)\,dx$

(29) $\int \sin^2(5x)\,dx$

(30) $\int \left(\frac{\cos\left(\sqrt{x}\right)}{\sqrt{x}\sin^2\left(\sqrt{x}\right)}\right)\,dx$

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Answers

(1) $-\frac{1}{3}\cos(3x) + C$

(2) $\frac{1}{2}\sin(2x + 4) + C$

(3) $\frac{1}{5}\tan(5x - 1) + C$

(4) $\frac{1}{2}\sec(2x) + C$

(5) $-\csc\left(x + \frac{\pi}{2}\right) + C$

(6) $-\frac{1}{2}\cot(2x - 3) + C$

(7) $-\frac{1}{4}\cos\left(2x^2\right) + C$

(8) $2\sin\left(\sqrt{x}\right) + C$

(9) $-\frac{3}{5}\cos(5t) - \frac{5}{2}\sin(2t) + C$

(10) $\frac{1}{3}\sin^2(3x) + C$

(11) $\frac{1}{6}\sin^3(2x) + C$

(12) $-\frac{1}{20}\cos^4(5x) + C$

(13) $\frac{1}{2}\tan(2\theta) + C$

(14) $\frac{1}{4}\tan^2(2\theta) + C$

(15) $-\cot(\theta) + C$

(16) $-\frac{1}{10}\cot^2(5\theta) + C$

(17) $\frac{1}{2}y + \frac{1}{8}\sin(4y) + C$

(18) $\frac{1}{2}x - \frac{1}{2}\sin(x) + C$

(19) $\frac{1}{3}\sin(3t) - \frac{1}{9}\sin^3(3t) + C$

(20) $\frac{2}{15}(2 + \sin(5t))^{\frac{3}{2}} + C$

(21) $\tan(x) + \sec(x) + C$

(22) $\frac{1}{3}\sin^3(x) - \frac{1}{3}\cos^3(x) + C$

(23) $\sqrt{2 - \cos(2t)} + C$

(24) $\frac{1}{7}\tan(7x) - x + C$

(25) $\frac{3}{8}\tan^4\left(\frac{2x}{3}\right) + C$

(26) $\frac{1}{5}\sin^5(x) + C$

(27) $\frac{1}{5}\sin^5(x) - \frac{1}{7}\sin^7(x) + C$

(28) $-\frac{1}{4}\cos(4x) + \frac{1}{12}\cos^3(4x) + C$

(29) $\frac{1}{2}x - \frac{1}{20}\sin(10x) + C$

(30) $-2\csc\left(\sqrt{x}\right) + C$