Ex 1: $\int 6x^2\,dx = C + 2x^3$

Ex 2: $\int \left(\log\left(x\right)^2 + \cos^2\left(x\right)\right) dx = C + x\log\left(x\right)^2 - 2x\log\left(x\right) + \frac{5x}{2} + \frac{\sin\left(x\right)\cos\left(x\right)}{2}$

Ex 3: $\int \frac{4e^x}{3\sin^3\left(x\right)}\,dx = C + \frac{4\int \frac{e^x}{\sin^3\left(x\right)}\,dx}{3}$

Ex 4: $\int \frac{1}{\sqrt{x}}\,dx = C + 2\sqrt{x}$

Ex 5: $\int \left(2\sin^2\left(x\right) + 5\cos\left(x\right)\right) dx = C + x - \sin\left(x\right)\cos\left(x\right) + 5\sin\left(x\right)$

Ex 6: $\int (e^x + \cos^3(x))\,dx = C + e^x - \frac{\sin^3(x)}{3} + \sin(x)$

Ex 7: $\int (-5x + 2\cos^2(x))\,dx = C - \frac{5x^2}{2} + x + \sin(x)\cos(x)$

Ex 8: $\int \left(-2\cos^2(x) + \frac{1}{x^2}\right)dx = C - x - \sin(x)\cos(x) - \frac{1}{x}$

Ex 9: $\int (3e^x + 4\log(x))\,dx = C + 4x\log(x) - 4x + 3e^x$

Ex 10: $\int \frac{e^{-x}\cos(x)}{2}\,dx = C + \frac{e^{-x}\sin(x)}{4} - \frac{e^{-x}\cos(x)}{4}$

Ex 11: $\int \left(x^2 - \log\left(x\right)\right) dx = C + \frac{x^3}{3} - x\log\left(x\right) + x$

Ex 12: $\int \left(4e^{2x} - 3\cos^3\left(x\right)\right) dx = C + 2e^{2x} + \sin^3\left(x\right) - 3\sin\left(x\right)$

Ex 13: $\int \left(-4x + 3\log\left(x\right)^2\right) dx = C - 2x^2 + 3x\log\left(x\right)^2 - 6x\log\left(x\right) + 6x$

Ex 14: $\int 20x\sin^2\left(x\right) dx = C + 5x^2\sin^2\left(x\right) + 5x^2\cos^2\left(x\right) - 10x\sin\left(x\right)\cos\left(x\right) + 5\sin^2\left(x\right)$

Ex 15: $\int \left(3\cos^3\left(x\right) - \frac{3}{x^2}\right) dx = C - \sin^3\left(x\right) + 3\sin\left(x\right) + \frac{3}{x}$

Ex 16: $\int \frac{x^4}{2}\,dx = C + \frac{x^5}{10}$

Ex 17: $\int \left(e^{3x} - \frac{5}{x}\right)\,dx = C + \frac{e^{3x}}{3} - 5\log\left(x\right)$

Ex 18: $\int \left(-\sin\left(x\right) + \frac{2}{x}\right)\,dx = C + 2\log\left(x\right) + \cos\left(x\right)$

Ex 19: $\int x^2 \log\left(x\right)^2\,dx = C + \frac{x^3 \log\left(x\right)^2}{3} - \frac{2x^3 \log\left(x\right)}{9} + \frac{2x^3}{27}$

Ex 20: $\int \left(\sin^2\left(x\right) + 4\cos^2\left(x\right)\right)\,dx = C + \frac{5x}{2} + \frac{3\sin\left(x\right)\cos\left(x\right)}{2}$

Ex 21: $\int \left(-x^4 + 3\log\left(x\right)\right) dx = C - \frac{x^5}{5} + 3x\log\left(x\right) - 3x$

Ex 22: $\int \frac{2e^{-3x}}{3x}\, dx = C + \frac{2\mathrm{Ei}\left(3xe^{i\pi}\right)}{3}$

Ex 23: $\int \frac{3x^{\frac{3}{2}}}{4}\, dx = C + \frac{3x^{\frac{5}{2}}}{10}$

Ex 24: $\int 5x^6\, dx = C + \frac{5x^7}{7}$

Ex 25: $\int \frac{\sin^3\left(x\right)}{2\cos^2\left(x\right)}\, dx = C + \frac{\cos\left(x\right)}{2} + \frac{1}{2\cos\left(x\right)}$

Ex 26: $\int \frac{\sin(x)}{x}\,dx = C + \mathrm{Si}(x)$

Ex 27: $\int 4x^{\frac{7}{2}}\,dx = C + \frac{8x^{\frac{9}{2}}}{9}$

Ex 28: $\int (x + 3\sin^3(x))\,dx = C + \frac{x^2}{2} + \cos^3(x) - 3\cos(x)$

Ex 29: $\int (-5e^{3x} + \cos(x))\,dx = C - \frac{5e^{3x}}{3} + \sin(x)$

Ex 30: $\int (-2x^4 + 4\log(x))\,dx = C - \frac{2x^5}{5} + 4x\log(x) - 4x$

Ex 31: $\int (3\sqrt{x} - x^4)\, dx = C + 2x^{\frac{3}{2}} - \frac{x^5}{5}$

Ex 32: $\int 9e^{3x}\cos^2(x)\, dx = C + \frac{6e^{3x}\sin^2(x)}{13} + \frac{18e^{3x}\sin(x)\cos(x)}{13} + \frac{33e^{3x}\cos^2(x)}{13}$

Ex 33: $\int \frac{x}{3\sin^2(x)}\, dx = C + \frac{x\tan\left(\frac{x}{2}\right)}{6} - \frac{x}{6\tan\left(\frac{x}{2}\right)} - \frac{\log\left(\tan^2\left(\frac{x}{2}\right)+1\right)}{3} + \frac{\log\left(\tan\left(\frac{x}{2}\right)\right)}{3}$

Ex 34: $\int \frac{x}{3}\, dx = C + \frac{x^2}{6}$

Ex 35: $\int (-3x + \log(x))\, dx = C - \frac{3x^2}{2} + x\log(x) - x$

Ex 36: $\int (5\log(x)^2 + 2\cos(x))\,dx = C + 5x\log(x)^2 - 10x\log(x) + 10x + 2\sin(x)$

Ex 37: $\int (-x^3 + e^x)\,dx = C - \frac{x^4}{4} + e^x$

Ex 38: $\int 20\sqrt{x}\cos(x)\,dx = C + \frac{15\sqrt{x}\sin(x)\Gamma\left(\frac{3}{4}\right)}{\Gamma\left(\frac{7}{4}\right)} - \frac{15\sqrt{2}\sqrt{\pi}S\left(\frac{\sqrt{2}\sqrt{x}}{\sqrt{\pi}}\right)\Gamma\left(\frac{3}{4}\right)}{2\Gamma\left(\frac{7}{4}\right)}$

Ex 39: $\int 12x^2\sin^2(x)\,dx = C + 2x^3\sin^2(x) + 2x^3\cos^2(x) - 6x^2\sin(x)\cos(x) + 3x\sin^2(x) - 3x\cos^2(x) + 3\sin(x)\cos(x)$

Ex 40: $\int \frac{x}{2\sin^2(x)}\,dx = C + \frac{x\tan\left(\frac{x}{2}\right)}{4} - \frac{x}{4\tan\left(\frac{x}{2}\right)} - \frac{\log\left(\tan^2\left(\frac{x}{2}\right)+1\right)}{2} + \frac{\log\left(\tan\left(\frac{x}{2}\right)\right)}{2}$