M II - 2014

Integrujte

(1) $\int \frac{\sin(x)}{(3-2\cos(x))^2}\,\mathrm{d}x.$

(2) $\int 2\sin(x)(1+2\cos(x))^5\,\mathrm{d}x.$

(3) $\int -2\cos(x)\sqrt[3]{(1-2\sin(x))^2}\,\mathrm{d}x.$

(4) $\int (\sin(x)+1)^2\cos(x)\,\mathrm{d}x.$

(5) $\int \big(1-3\sin(x)\big)^2\sin(x)\cos(x)\,\mathrm{d}x.$

(6) $\int \sin(x)\sqrt{25-4\cos(x)}\,\mathrm{d}x.$

(7) $\int \frac{\cos(x)}{2-5\sin(x)}\,\mathrm{d}x.$

(8) $\int \big(1-\sin(x)\big)\big(1+\sin(x)\big)\cos(x)\,\mathrm{d}x.$

(9) $\int \frac{3\cos(x)}{\sqrt{1-2\sin(x)}}\,\mathrm{d}x.$

(10) $\int -\frac{2\cos(x)}{\sqrt[3]{1-3\sin(x)}}\,\mathrm{d}x.$

(11) $\int \frac{\sin(x)}{1+2\cos(x)}\,\mathrm{d}x.$

(12) $\int \frac{\cos(x)}{(2\sin(x)+3)^3}\,\mathrm{d}x.$

(13) $\int \sin(x)(2-3\cos(x))^2\,\mathrm{d}x.$

(14) $\int \frac{3\cos(x)}{4\sin(x)+1}\,\mathrm{d}x.$

(15) $\int \cos^3(x)\,\mathrm{d}x.$

(16) $\int \sin^3(x)\,\mathrm{d}x.$

(17) $\int \frac{\sin(x)}{3-2\cos(x)}\,\mathrm{d}x.$

(18) $\int \sin^5(x)\cos(x)\,\mathrm{d}x.$

(19) $\int \frac{3\cos(x)}{(3-2\sin(x))^4}\,\mathrm{d}x.$

(20) $\int \cos^5(x)\,\mathrm{d}x.$

(21) $\int \sin(x)\cos(x)\sqrt{2-\cos(x)}\,\mathrm{d}x.$

(22) $\int \sin(x)\left(-(3\cos(x)+1)^3\right)\mathrm{d}x.$

(23) $\int (2-3\sin(x))(1-\sin(x))\cos(x)\,\mathrm{d}x.$

(24) $\int \big(1-\sin(x)\big)^2\sin(x)\cos(x)\,\mathrm{d}x.$

(25) $\int \sin(x)(\cos(x)+4)^3\,\mathrm{d}x.$

(26) $\int -3\sin(x)(2\cos(x)-1)^3\,\mathrm{d}x.$

(27) $\int \frac{\sin(x)}{1+\cos^2(x)}\,\mathrm{d}x.$

(28) $\int \frac{2\sin(x)}{(2\cos(x)+3)^5}\,\mathrm{d}x.$

(29) $\int 3\cos(x)\ \mathrm{e}^{2-3\sin(x)}\,\mathrm{d}x.$

(30) $\int \frac{\sin(x)}{\sqrt{3\cos(x)+1}}\,\mathrm{d}x.$

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Integrujte

(1) $\int \frac{\sin(x)}{(3-2\cos(x))^2}\,\mathrm{d}x = -\frac{1}{6-4\cos(x)} + c.$

(2)
$\int 2\sin(x)(1+\cos(x)+1)^5\,\mathrm{d}x = -\frac{1}{6}(2\cos(x)+1)^6+c = 2\left(-\frac{16}{3}\cos^6(x) - 16\cos^5(x) - 20\cos^4(x) - \frac{40\cos^3(x)}{3} - 5\cos\right.$

(3) $\int -2\cos(x)\sqrt[3]{(1-2\sin(x))^2}\,\mathrm{d}x = \frac{3}{5}(1-2\sin(x))^{5/3} + c = \frac{3}{5}\sqrt[3]{(1-2\sin(x))^5} + c.$

(4)
$\int (\sin(x)+1)^2\cos(x)\,\mathrm{d}x = \frac{(1+\sin x)^3}{3}+c = \frac{\sin^3(x)}{3}+\sin^2(x)+\sin(x)+c = \frac{\sin^3(x)}{3}+\sin(x)-\cos^2(x)+c.$

(5)
$\int (1-3\sin(x))^2\sin(x)\cos(x)\,\mathrm{d}x = \frac{9\sin^4(x)}{4}-2\sin^3(x)+\frac{\sin^2(x)}{2}+c = \frac{9\sin^4(x)}{4}-2\sin^3(x)-\frac{\cos^2(x)}{2}+c.$

(6) $\int \sin(x)\sqrt{25-4\cos(x)}\,\mathrm{d}x = \frac{1}{6}(25-4\cos(x))^{3/2} + c = \frac{1}{6}\sqrt{(25-4\cos(x))^3} + c..$

(7) $\int \frac{\cos(x)}{2-5\sin(x)}\,\mathrm{d}x = -\frac{1}{5}\ln(2-5\sin(x)) + c = -\frac{1}{5}\ln(2-5\sin(x)) + c.$

(8) $\int \big(1-\sin(x)\big)\big(1+\sin(x)\big)\cos(x)\,\mathrm{d}x = \sin(x) - \frac{\sin^3(x)}{3} + c = \frac{3\sin(x)}{4} + \frac{1}{12}\sin(3x) + c.$

(9) $\int \frac{3\cos(x)}{\sqrt{1-2\sin(x)}}\,\mathrm{d}x = -3\sqrt{1-2\sin(x)} + c = -3\sqrt{1-2\sin(x)} + c.$

(10) $\int -\frac{2\cos(x)}{\sqrt[3]{1-3\sin(x)}}\,\mathrm{d}x = \sqrt[3]{(1-3\sin(x))^2} + c = (1-3\sin(x))^{2/3} + c.$

(11) $\int \frac{\sin(x)}{1+2\cos(x)}\,\mathrm{d}x = -\frac{1}{2}\ln(1+2\cos(x)).$

(12) $\int \frac{\cos(x)}{(2\sin(x)+3)^3}\,\mathrm{d}x = -\frac{1}{4(2\sin(x)+3)^2} + c = -\frac{1}{4(2\sin(x)+3)^2} + c.$

(13) $\int \sin(x)(2-3\cos(x))^2\,\mathrm{d}x = -\frac{1}{9}\,(2-\cos x)^3 + c = -3\cos^3(x) + 6\cos^2(x) - 4\cos(x) + c.$

(14) $\int \frac{3\cos(x)}{4\sin(x)+1}\,\mathrm{d}x = \frac{3}{4}\ln(4\sin(x)+1) + c = \frac{3}{4}\ln(4\sin(x)+1) + c.$

(15) $\int \cos^3(x)\,\mathrm{d}x = \sin(x) - \frac{\sin^3(x)}{3} + c = \frac{3\sin(x)}{4} + \frac{1}{12}\sin(3x) + c.$

(16) $\int \sin^3(x)\,\mathrm{d}x = \frac{\cos^3(x)}{3} - \cos(x) + c = \frac{1}{12}\cos(3x) - \frac{3\cos(x)}{4} + c.$

(17) $\int \frac{\sin(x)}{3-2\cos(x)}\,\mathrm{d}x = \frac{1}{2}\ln(2\cos(x)-3) + c.$

(18) $\int \sin^5(x)\cos(x)\,\mathrm{d}x = \frac{\sin^6(x)}{6} + c = \frac{\sin^6(x)}{6} + c.$

(19) $\int \frac{3\cos(x)}{(3-2\sin(x))^4}\,\mathrm{d}x = \frac{1}{2(3-2\sin(x))^3} + c = -\frac{1}{2(2\sin(x)-3)^3} + c.$

(20) $\int \cos^5(x)\,\mathrm{d}x = \frac{\sin^5(x)}{5} - \frac{2\sin^3(x)}{3} + \sin(x) + c = \frac{5\sin(x)}{8} + \frac{5}{48}\sin(3x) + \frac{1}{80}\sin(5x) + c.$

(21)
$\int \sin(x)\sqrt{2-\cos(x)}\cos(x)\,\mathrm{d}x = \frac{4}{3}\left(2-\cos(x)\right)^{\frac{3}{2}} - \frac{2\left(2-\cos(x)\right)^{\frac{5}{2}}}{5} + c = \frac{2}{15}(2-\cos(x))^{3/2}(3\cos(x)+4) + c.$

(22)
$\int \sin(x)\left(-(3\cos(x)+1)^3\right)\,\mathrm{d}x = \frac{1}{12}(3\cos(x)+1)^4 + c = \frac{27\cos^4(x)}{4} + 9\cos^3(x) + \frac{9\cos^2(x)}{2} + \cos(x) + c.$

(23)
$\int (2-3\sin(x))(1-\sin(x))\cos(x)\,\mathrm{d}x = \sin^3(x) - \frac{5\sin^2(x)}{2} + 2\sin(x) + c = \sin^3(x) + 2\sin(x) + \frac{5\cos^2(x)}{2} + c.$

(24)
$\int (1-\sin(x))^2\sin(x)\cos(x)\,\mathrm{d}x = \frac{\sin^4(x)}{4} - \frac{2\sin^3(x)}{3} + \frac{\sin^2(x)}{2} + c = \frac{\sin^4(x)}{4} - \frac{2\sin^3(x)}{3} - \frac{\cos^2(x)}{2} + c.$

(25)
$$\int \sin(x)(\cos(x)+4)^3\,\mathrm{d}x = -\frac{1}{4}(\cos(x)+4)^4+c = -\frac{1}{4}\cos^4(x)-4\cos^3(x)-24\cos^2(x)-64\cos(x)+c.$$

(26) $$\int -3\sin(x)(2\cos(x)-1)^3\,\mathrm{d}x = \frac{3}{8}(2t-1)^4+c = 6\cos^4(x)-12\cos^3(x)+9\cos^2(x)-3\cos(x)+c.$$

(27) $$\int \frac{\sin(x)}{\cos^2(x)+1}\,\mathrm{d}x = -\operatorname{arctg}(\cos(x))+c.$$

(28) $$\int \frac{2\sin(x)}{(2\cos(x)+3)^5}\,\mathrm{d}x = \frac{1}{4(2\cos(x)+3)^4}+c.$$

(29) $$\int 3\cos(x)\,\mathrm{e}^{2-3\sin(x)}\,\mathrm{d}x = -\mathrm{e}^{2-3\sin(x)}+c.$$

(30) $$\int \frac{\sin(x)}{\sqrt{3\cos(x)+1}}\,\mathrm{d}x = -\frac{2}{3}\sqrt{3\cos(x)+1}+c = -\frac{2}{3}\sqrt{3\cos(x)+1}+c.$$