Cálculo 2 - Lista 18

1. $\int \frac{dx}{2x^3+x}$
2. $\int \frac{(x+4)dx}{x(x^2+4)}$
3. $\int \frac{dx}{16x^4-1}$
4. $\int \frac{(x^2-4x-4)\,dx}{x^3-2x^2+4x-8}$
5. $\int \frac{t^2+t+1}{(2t+1)(t^2+1)}\,dt$
6. $\int \frac{3w^3+13w+4}{w^3+4w}\,dw$
7. $\int \frac{x^2+x}{x^3-x^2+x-1}\,dx$
8. $\int \frac{dx}{9x^4+x^2}$
9. $\int \frac{dx}{x^3+x^2+x}$
10. $\int \frac{x+3}{4x^4+4x^3+x^2}\,dx$
11. $\int \frac{2x^2-x+2}{x^5+2x^3+x}\,dx$
12. $\int \frac{2x^3+9x}{(x^2+3)(x^2-2x+3)}\,dx$
13. $\int \frac{5z^3-z^2+15z-10}{(z^2-2z+5)^2}\,dz$
14. $\int \frac{dt}{(t^2+1)^3}$
15. $\int \frac{(x^2+2x-1)}{27x^3-1}\,dx$
16. $\int \frac{e^{5x}}{(e^{2x}+1)^2}\,dx$
17. $\int \frac{18dx}{(4x^2+9)^2}$
18. $\int \frac{2x^2+3x+2}{x^3+4x^2+6x+4}\,dx$
19. $\int \frac{(\sec^2 x+1)\sec^2 x}{1+\tan^3 x}\,dx$

Respostas

1. $\ln|x| - \frac{1}{2}\ln(2x^2+1) + C$

2. $\ln|x| - \frac{1}{2}\ln(x^2+4) + \frac{1}{2}\arctan\frac{x}{2} + C$
3. $\frac{1}{8}\ln\left|\frac{2x-1}{2x+1}\right| - \frac{1}{4}\arctan 2x + C$
4. $\ln\left|\frac{x^2+4}{x-2}\right| + C$
5. $\frac{3}{10}\ln|2t+1| + \frac{1}{10}\ln(t^2+1) + \frac{2}{5}\arctan t + C$
6. $3w + \frac{1}{2}\arctan\frac{w}{2} + \ln\left|\frac{w}{\sqrt{w^2+4}}\right| + C$
7. $\ln|x-1| + \arctan x + C$
8. $-\frac{1}{x} - 3\arctan 3x + C$
9. $\ln|x| - \frac{1}{2}\ln|x^2+x+1| - \frac{1}{\sqrt{3}}\arctan\frac{2x+1}{\sqrt{3}} + C$
10. $-11\ln|x| + \frac{11}{2}\ln|4x^2+4x+1| - \frac{3}{x} - \frac{5}{2x+1} + C$
11. $2\ln|x| - \ln(x^2+1) - \frac{1}{2}\arctan x - \frac{1}{2}\frac{x}{1+x^2} + C$
12. $\ln|x^2-2x+3| - \frac{\sqrt{3}}{2}\arctan\frac{x}{\sqrt{3}} + \frac{7}{4}\sqrt{2}\arctan\frac{x-1}{\sqrt{2}} + C$
13. $\frac{5}{2}\ln\left|z^2-2z+5\right| + \frac{-47z+15}{8(z^2-2z+5)} + \frac{65}{16}\arctan\frac{z-1}{2} + C$
14. $\frac{3}{8}\arctan t + \frac{1}{2}\frac{t}{t^2+1} + \frac{1}{8}\frac{t-t^3}{(t^2+1)^2} + C$
15. $-\frac{2}{81}\ln|3x-1| + \frac{5}{162}\ln|9x^2+3x+1| + \frac{5}{9\sqrt{3}}\arctan\frac{6x+1}{\sqrt{3}} + C$
16. $e^x - \frac{3}{2}\arctan e^x + \frac{e^x}{2(1+e^{2x})} + C$
17. $\frac{1}{6}\arctan\frac{2x}{3} + \frac{x}{4x^2+9} + C$
18. $2\ln|x+2| - \arctan|x+1| + C$
19. $\ln|\tan x + 1| + \frac{2}{\sqrt{3}}\arctan\frac{2\tan x - 1}{\sqrt{3}} + C$