

Funções de Uma Variável

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Lista 3 - Integrais

Resolva as integrais abaixo.

1. $\int \left(\frac{y}{4} - 3\right)^2 dy$

2. $\int \frac{x^3 dx}{2x + 1}$

3. $\int \left(\frac{5x}{x^2 - 3} - \sin 2x\right) dx$

4. $\int \frac{x dx}{\sqrt{a^2 - x^2}}$

5. $\int \frac{5bx dx}{8a - 6bx^2}$

6. $\int \cot^2(1 - 2\theta) \operatorname{cosec}^2(1 - 2\theta) d\theta$

7. $\int \frac{dx}{1 + e^{3x}}$

8. $\int x\sqrt{2x + 1} dx$

9. $\int \frac{x^2 dx}{(x^2 + 1)^2}$

10. $\int \operatorname{sen}^5 \theta \cos^2 \theta d\theta$

11. $\int \frac{\ln x dx}{x}$

12. $\int \cos^4\left(\frac{x}{5}\right) dx$

13. $\int \frac{x dx}{(x + 1)(x^2 + 1)}$

14. $\int x \arccos 2x dx$

15. $\int \frac{y^2 dy}{(y - 1)(y^2 + 1)}$

16. $\int \operatorname{tg}^3(2 - 3x) dx$

17. $\int \operatorname{sen} mx \cos nx dx, \quad m \neq n$

Use $\operatorname{sen}(A + B) + \operatorname{sen}(A - B) = 2\operatorname{sen}A \cos B$.

18. $\int \operatorname{sen} mx \operatorname{sen} nx dx, \quad m \neq n$

19. $\int x \operatorname{arctg} 2x dx$

20. $\int \operatorname{sen}^4(3 - 2x) dx$