

Lista de Exercícios

Cálculo Integral

Resolva as integrais abaixo:

1. $\int (12x^3 - 6x^2 - 4) dx$

2. $\int \left(-\frac{6}{x^2} + \frac{3}{x} + \sqrt[5]{x^3} + \frac{x^3}{6} \right) dx$

3. $\int \left(\frac{6}{x^2} + \frac{4}{x} \right) dx$

4. $\int 2x^3 dx$

5. $\int (x^2 - 3x) dx$

6. $\int (x^2 + 3x) dx$

7. $\int (5 - x) dx$

8. $\int 5 dx$

9. $\int (3x^3 - 2x^2 + 8x - 6) dx$

10. $\int \frac{5}{x} dx$

11. $\int \left(x^2 + \frac{6}{x} \right) dx$

12. $\int \left(x^2 + \frac{1}{x^2} \right) dx$

13. $\int \left(\frac{1}{x^3} + x^2 - 5x \right) dx$

14. $\int \sqrt{x} dx$

15. $\int 5 \sqrt[3]{x} dx$

16. $\int (\sqrt{x} + \sqrt[3]{x}) dx$

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

18. $\int 5e^x dx$

19. $\int (3e^x + x^3) dx$

20. $\int \frac{2x}{x^2 - 1} dx$

21. $\int 2(2x + 4)^5 dx$

22. $\int \frac{3x^2}{x^3 - 3} dx$

23. $\int (2x^2 + 1)^3 x dx$

24. $\int \frac{x}{(2x^2 - 1)^3} dx$

25. $\int x(3x^2 + 6)^4 dx$

26. $\int \sqrt{4x + 4} dx$

27. $\int \frac{4x}{\sqrt{4x^2 + 5}} dx$

28. $\int \frac{1}{4x + 1} dx$

29. $\int 2x(x^2 + 3)^4 dx$

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

31. $\int x \cos x^2 dx$

32. $\int \frac{(\ln x)^3}{x} dx$

33. $\int_2^6 2x dx$

34. $\int_0^1 x^3(x^4 + 1)^2 dx$

35. $\int_1^3 (x^2 + 2) dx$

36. $\int_2^3 (x^2 - 1) dx$

37. $\int_1^4 3x^2 dx$

38. $\int_2^3 (3x^2 + 2) dx$

Respostas

20. $\ln|x^2 - 1| + c$

21. $\frac{(2x + 4)^6}{6} + c$

22. $\ln|x^3 - 3| + c$

23. $\frac{(2x^2 + 1)^4}{16} + c$

24. $-\frac{(2x^2 - 1)^{-2}}{8} + c$

25. $\frac{(3x^2 + 6)^5}{30} + c$

26. $\frac{(4x + 4)^{3/2}}{6} + c$

27. $\sqrt{4x^2 + 5} + c$

28. $\frac{\ln|4x + 1|}{4} + c$

29. $\frac{(x^2 + 3)^5}{5} + c$

30. $\frac{(\ln x)^2}{2} + c$

31. $\frac{\sin x^2}{2} + c$

32. $\frac{(\ln x)^4}{4} + c$

33. 32

34. $\frac{7}{12}$