1. $\int_{0}^{2} 3x^{2} dx = 8$ 2. $\int_{1}^{x} (2x+1) \, dx = 18$

Lista de Exercícios — Integral Definida (Básicas) com Respostas)

3.
$$\int_{0}^{1} x^3 dx = \frac{1}{4}$$

4.
$$\int_0^\pi \sin x \, dx = 2$$
5. $\int_0^{\pi/2} \cos x \, dx = 1$

6.
$$\int_{0}^{e} \frac{1}{x} dx = 1$$

7.
$$\int_0^2 e^{2x} \, dx = rac{e^4 - 1}{2}$$
8. $\int_0^{\pi/4} an x \, dx = rac{1}{2} \ln 2$

9.
$$\int_0^{\pi/4} an x \, dx = rac{1}{2} \ln 2$$

$$\int_{0}^{1} an x \, dx = rac{1}{2} \ln 2 \ \int_{0}^{1} rac{1}{1+x^2} \, dx = rac{\pi}{4} \ \int_{0}^{1} rac{1}{1+x^2} \, dx$$

9.
$$\int_0^1 rac{1}{1+x^2}\,dx = rac{\pi}{4}$$
10. $\int_0^1 \sqrt{x}\,dx = rac{2}{\pi}$

9.
$$\int_0^1 \frac{1}{1+x^2} \, dx = \frac{\pi}{4}$$
10. $\int_0^1 \sqrt{x} \, dx = \frac{2}{3}$

$$\int_{0}^{1} \sqrt{x} \, dx = rac{2}{3}$$

10.
$$\int_0^1 \sqrt{x} \, dx = rac{2}{3}$$
11. $\int_1^1 x^5 \, dx = 0$

$$\int_{-1}^{2} x^5 \, dx = 0 \ \int_{-1}^{2} x^4 \, dx = rac{64}{7}$$

$$\int_{-1}^{2} x^{4} \, dx = 0 \ \int_{-\pi}^{2} x^{4} \, dx = rac{64}{5}$$

$$\int_{-2}^{2} x^4 \, dx = rac{64}{5} \ \int_{-\infty}^{\pi} \cos(2x) \, dx = 0$$

12.
$$\int_{-2}^{2} x^4 dx = \frac{64}{5}$$
13. $\int_{0}^{\pi} \cos(2x) dx = 0$

$$\int_{-2}^{2} x^4 dx = \frac{64}{5}$$

14. $\int_{0}^{1} \frac{2x}{x^{2}+1} dx = \ln 2$

16. $\int_{1}^{1} (3x^{2} + 4) dx = 5$

18. $\int_{0}^{\pi/6} \sin x \cos x \, dx = \frac{1}{8}$

19. $\int_0^1 \frac{x+1}{(x+1)^2} \, dx = \ln 2$

20. $\int_{0}^{x} (4x+1) dx = 10$

15. $\int_{0}^{\ln 2} e^{x} dx = 1$

17. $\int_{1}^{x} \frac{1}{x^2} dx = \frac{1}{2}$

$$\int_{-1}^{1} x^5 \, dx = 0 \ \int_{-1}^{2} x^4 \, dx = rac{64}{5}$$

$$rac{1}{2}\,dx=rac{2}{4} \ x=rac{2}{3}$$

$$dx=rac{\pi}{4} \ =rac{2}{3}$$

$$dx=rac{1}{2}\ln 2 \ dx=rac{\pi}{4}$$

$$egin{aligned} dx &= rac{1}{2} \ln 2 \ dx &= rac{\pi}{4} \end{aligned}$$