

Lista de ejercicios de la lección 1.3

Instrucciones. Determinar el valor aproximado de la integral usando:

- a) Regla del Trapecio
- b) Regla de Simpson

1.
$$\int_{1}^{2} \frac{1}{x} dx$$
, $n = 6$

1.
$$\int_{1}^{2} \frac{1}{x} dx$$
, $n = 6$ 10. $\int_{0}^{1} x^{5} e^{x} dx$, $n = 10$

2.
$$\int_0^{\frac{1}{2}} \sin\left(e^{\frac{t}{2}}\right) dt$$
, $n = 8$

2.
$$\int_0^{\frac{1}{2}} \sin(e^{\frac{t}{2}}) dt$$
, $n = 8$ 11. $\int_0^4 \sqrt{x} \sin x dx$, $n = 8$

$$3. \int_{2}^{3} \frac{1}{\ln x} \, dx, \quad n = 10$$

3.
$$\int_{2}^{3} \frac{1}{\ln x} dx$$
, $n = 10$ 12. $\int_{0}^{3} \frac{1}{1 + y^{5}} dy$, $n = 6$

4.
$$\int_0^1 \ln(1+e^x) dx$$
, $n=8$ 13. $\int_0^3 \frac{1}{1+x} dx$, $n=8$

13.
$$\int_0^3 \frac{1}{1+x} \, dx, \ \ n = 8$$

5.
$$\int_{1}^{2} e^{\frac{1}{x}} dx$$
, $n = 4$

5.
$$\int_{1}^{2} e^{\frac{1}{x}} dx$$
, $n = 4$ 14. $\int_{0}^{1} \frac{1}{\sqrt{1+x^{2}}} dx$, $n = 4$

6.
$$\int_{1}^{3} \frac{x}{x^4 + 1} dx$$
, $n = 4$

6.
$$\int_{1}^{3} \frac{x}{x^4 + 1} dx$$
, $n = 4$ 15. $\int_{2}^{3} \sqrt{1 + x^3} dx$, $n = 4$

7.
$$\int_0^2 \frac{1}{4+x^2} dx$$
, $n=5$

7.
$$\int_0^2 \frac{1}{4+x^2} dx$$
, $n=5$ 16. $\int_0^{0.6} \frac{1}{\sqrt{4-x^2}} dx$, $n=6$

8.
$$\int_0^1 e^{x^2} dx, \quad n = 10$$

8.
$$\int_0^1 e^{x^2} dx$$
, $n = 10$ 17. $\int_1^{\frac{5}{2}} \sqrt[3]{x^2 + 8} dx$, $n = 6$

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