## 3.4. Guía 3

### Integrales indefinidas: sustitución

Calcule:

1. $\int (3x+1)^4 dx$

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

3. $\int \dfrac{\text{sen}(x)}{\cos^2(x)+1} dx$

4. $\int t^2 \sqrt{t^3 - 1} dx$

5. $\int \sqrt{9 - x^2} x dx$

6. $\int \dfrac{dx}{\sqrt{x}(1+x)}$

7. $\int \dfrac{x-2}{(x^2 - 4x + 3)^3} dx$

8. $\int \dfrac{x^2 + x}{(4 - 3x^2 - 2x^3)^4} dx$

9. $\int \dfrac{s\,ds}{\sqrt[3]{1 - 2s^2}} ds$

10. $\int \sqrt[5]{t^4 - t^2}(10t^3 - 5t) dt$

11. $\int \dfrac{dx}{x\sqrt{x^6 - 4}}$

12. $\int \dfrac{(\sqrt{u} + 3)^4}{\sqrt{u}} du$

13. $\int (1 + \frac{1}{u})^{-3} \frac{1}{u^2} du$

14. $\int \dfrac{x\,dx}{\sqrt{x^2 + 9}}$

15. $\int 5\sqrt{8x + 5} dx$

16. $\int \dfrac{\cos(x) dx}{\sqrt{9 - \text{sen}^2(x)}}$

17. $\int \tan^3(x)\sec^2(x) dx$

18. $\int \dfrac{x^2 dx}{\sqrt[4]{(x^3 + 1)^7}}$

19. $\int \dfrac{\text{sen}(\sqrt{x}) dx}{\sqrt{x}}$

20. $\int \dfrac{\text{Arcsen}(x) dx}{\sqrt{1 - x^2}}$

21. $\int x\,\text{sen}(x^2)\cos(x^2) dx$

22. $\int \dfrac{\text{Arcsec}(x) dx}{x\sqrt{x^2 - 1}}$

23. $\int \dfrac{x\,\text{sen}(\sqrt{x^2 + 4}) dx}{\sqrt{x^2 + 4}}$

24. $\int \dfrac{x\cos(\sqrt[3]{x^2 + 3}) dx}{\sqrt[3]{x^2 + 3}}$

25. $\int x^2(x^3 + 5)^8 \cos((x^3 + 5)^9) dx$

26. $\int x^6(7x^7 + \pi)^8 \text{sen}((7x^7 + \pi)^9) dx$

27. $\int x\cos(x^2 + 4)\sqrt{\text{sen}(x^2 + 4)} dx$

28. $\int x^6 \text{sen}(3x^7 + 9)\sqrt[3]{\cos(3x^7 + 9)} dx$

29. $\int \dfrac{\sqrt[5]{\tan(x^{-3} + 1)} dx}{x^4 \cos^2(x^{-3} + 1)}$

### Integrales indefinidas: por partes

Calcule:

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

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

3. $\int \text{Arcsen}(x) dx$

4. $\int x\sqrt{x + 1} dx$

5. $\int x\sqrt[3]{2x + 7} dx$

6. $\int x^5\sqrt{x^3 + 4} dx$

7. $\int x^{13}\sqrt{x^7 + 1} dx$

8. $\int \dfrac{x^7}{(7 - 3x^4)^{3/2}} dx$

9. $\int x^3\sqrt{4 - x^2} dx$

10. $\int \text{sen}(x)\,\text{sen}(3x) dx$

11. $\int \cos(5x)\,\text{sen}(7x) dx$

**Integrales indefinidas: integrales trigonométricas**

Calcule:

1. $\int \operatorname{sen}^4(x)dx$

2. $\int \cos^6(x)dx$

3. $\int \operatorname{sen}^3(x)\cos^4(x)dx$

4. $\int \operatorname{sen}^3(x)\cos^{-6}(x)dx$

5. $\int \operatorname{sen}^2(x)\cos^4(x)dx$

6. $\int \operatorname{sen}(2x)\cos(3x)dx$

    (sugerencia: use prostaféresis)

7. $\int \cot^4(x)dx$

8. $\int \tan^{-3/2}(x)\sec^4(x)dx$

9. $\int \tan^3(x)\sec^{-1/2}(x)dx$