

Problemas de integrales definidas y áreas

2º de Bachillerato

Calcular el área encerrada entre las siguientes gráficas:

1. $f(x) = x^2 - 6x, g(x) = 0$
2. $f(x) = x^2 + 2x + 1, g(x) = 2x + 5$
3. $f(x) = x^2 - 4x + 3, g(x) = -x^2 + 2x + 3$
4. $f(x) = x^2, g(x) = x^3$
5. $f(x) = 3(x^3 - x), g(x) = 0$
6. $f(x) = (x - 1)^3, g(x) = x - 1$
7. $f(x) = x^2 - 4x, g(x) = 0$
8. $f(x) = 3 - 2x - x^2, g(x) = 0$
9. $f(x) = x^2 + 2x + 1, g(x) = 3x + 3$
10. $f(x) = -x^2 + 4x + 2, g(x) = x + 2$
11. $f(x) = x, g(x) = 2 - x, h(x) = 0$
12. $f(x) = \frac{1}{x^2}, g(x) = 0, x = 1, x = 5$
13. $f(x) = 3x^2 + 2x, g(x) = 8$
14. $f(x) = x(x^2 - 3x + 3), g(x) = x^2$
15. $f(x) = x^3 - 2x + 1, g(x) = -2x, x = 1$
16. $f(x) = \sqrt[3]{x}, g(x) = x$
17. $f(x) = \sqrt{3x} + 1, g(x) = x + 1$
18. $f(x) = x^2 + 5x - 6, g(x) = 6x - 6$
19. $f(x) = x^2 - 4x + 3, g(x) = 3 + 4x - x^2$
20. $f(x) = x^4 - 2x^2, g(x) = 2x^2$
21. $f(y) = y^2, g(y) = y + 2$
22. $f(y) = y(2 - y), g(y) = -y$
23. $f(y) = y^2 + 1, g(y) = 0, y = -1, y = 2$

$$24. \ f(y) = \frac{y}{\sqrt{16 - y^2}}, \ g(y) = 0, \ y = 3$$

$$25. \ f(x) = \frac{1}{x}, \ g(x) = -x^2 + 4x - 2, \ x > 0$$

$$26. \ f(x) = 3^x, \ g(x) = 2x + 1$$

$$27. \ f(x) = \frac{1}{1+x^2}, \ g(x) = \frac{x^2}{2}$$

$$28. \ f(x) = 2, \ g(x) = \sec x, \ -\frac{\pi}{3} \leq x \leq \frac{\pi}{3}$$

$$29. \ f(x) = 2 \sin x, \ g(x) = \tan x, \ -\frac{\pi}{3} \leq x \leq \frac{\pi}{3}$$

$$30. \ f(x) = \sin 2x, \ g(x) = \cos x, \ \frac{\pi}{6} \leq x \leq \frac{5\pi}{6}$$

$$31. \ f(x) = 2 \sin x + \sin 2x, \ y = 0, \ 0 \leq x \leq \pi$$

$$32. \ f(x) = 2 \sin x + \cos 2x, \ y = 0, \ 0 \leq x \leq \pi$$

$$33. \ f(x) = xe^{x^2}, \ y = 0, \ 0 \leq x \leq 1$$

$$34. \ f(x) = \frac{1}{x^2} e^{1/x}, \ y = 0, \ 0 \leq x \leq 3$$

$$35. \ f(x) = \frac{6x}{x^2 + 1}, \ y = 0, \ 0 \leq x \leq 3$$

$$36. \ f(x) = \frac{4}{x}, \ x = 0, \ y = 1, \ y = 4$$