

## Problemas de integrales definidas y áreas

### 2º de Bachillerato

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