

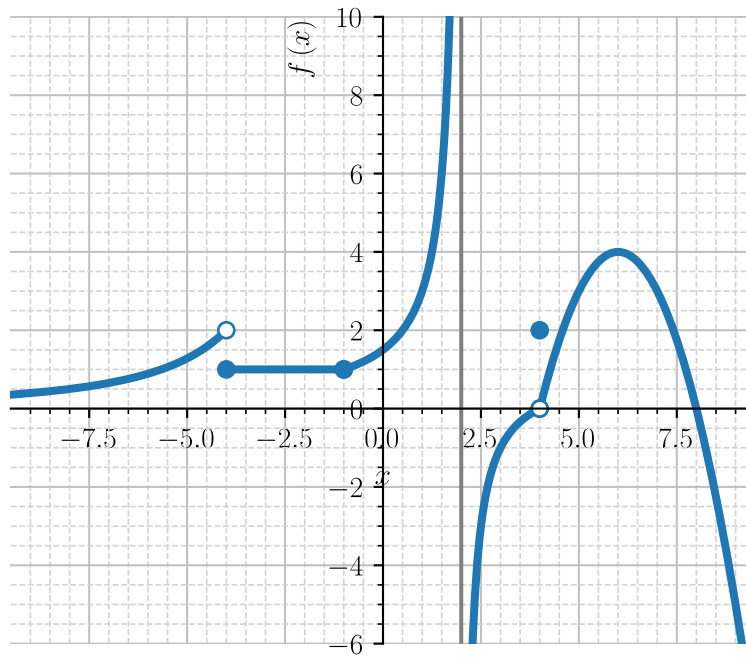
Gráfica de una función definida a trozos con sympy y spb

Función

$$f(x) = \begin{cases} \frac{32}{x^2} & \text{for } x < -4 \\ 1 & \text{for } x \leq -1 \\ -\frac{3}{x-2} & \text{for } x < 2 \\ \frac{x-4}{x-2} & \text{for } x < 4 \\ 2 & \text{for } x = 4 \\ (4-x)(x-8) & \text{for } x > 4 \end{cases}$$

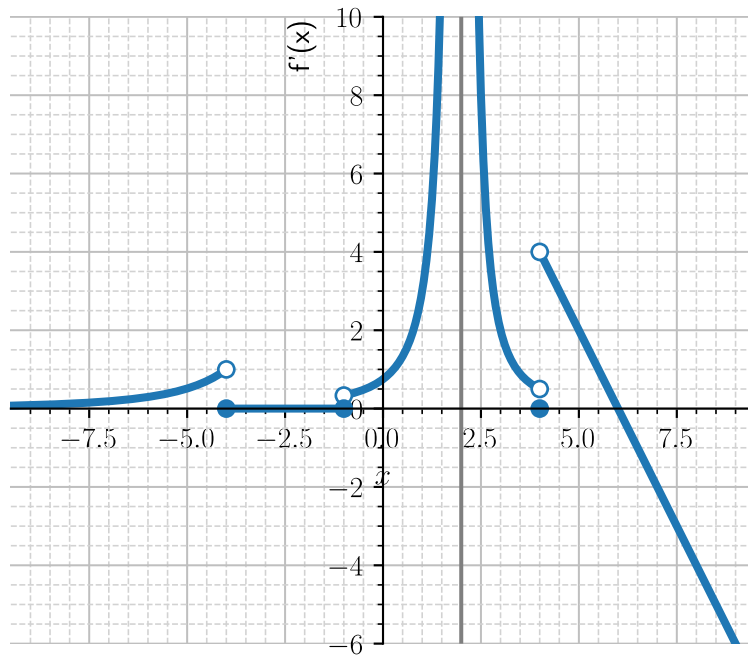
Cuadro 1: Tabla de valores

x	f(x)
-9	32/81
-8	1/2
-7	32/49
-6	8/9
-5	32/25
-4	1
-3	1
-2	1
-1	1
0	3/2
1	3
2	
3	-1
4	2
5	3
6	4
7	3
8	0



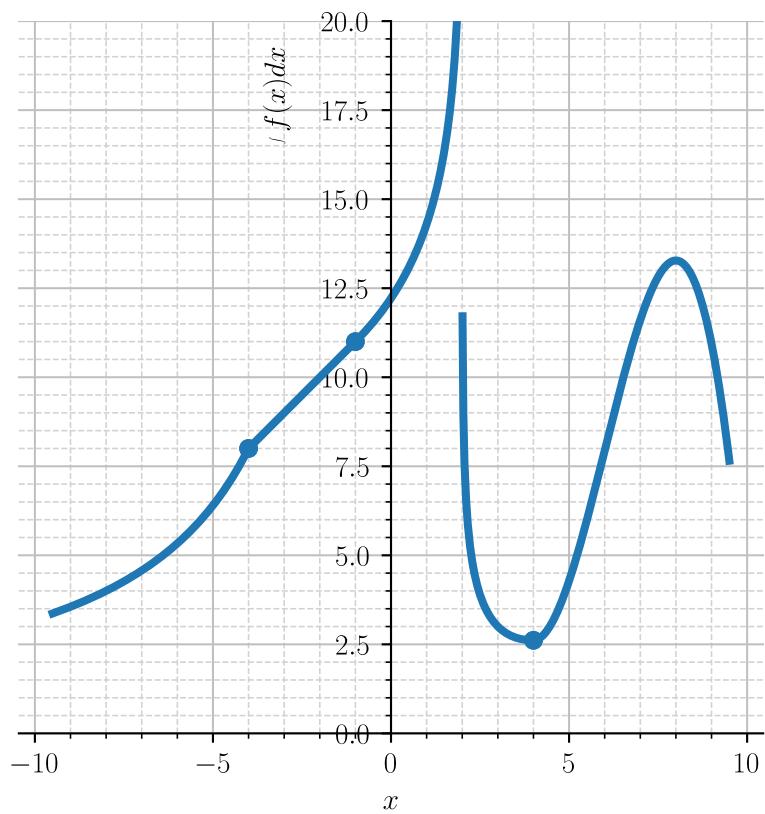
Derivada de la función

$$f'(x) = \begin{cases} -\frac{64}{x^3} & \text{for } x < -4 \\ 0 & \text{for } -4 \leq x < -1 \\ 0 & \text{for } -1 \leq x < 2 \\ \frac{(x-2)^2}{x-4} + \frac{1}{x-2} & \text{for } 2 < x < 4 \\ 0 & \text{for } x = 4 \\ 12 - 2x & \text{for } x > 4 \end{cases}$$



Integral de la función

$$\int f(x) dx = \begin{cases} -\frac{32}{x} & \text{for } x < -4 \\ x + 12 & \text{for } x \leq -1 \\ -3 \ln(x-2) + 3 \ln(3) + 11 + 3i\pi & \text{for } x < 2 \\ x - 2 \ln(x-2) & \text{for } x < 4 \\ -\frac{x^3}{3} + 6x^2 - 32x - 2 \ln(2) + \frac{172}{3} & \text{otherwise} \end{cases}$$



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