Zadatak 2. Izračunaj površinu lika omeđenog parabolom $y = \frac{1}{4}x^2$ i pravcem koji siječe parabolu u točkama s apscisama 2 i 4.

Rješenje. $y(2) = 1 \implies A(2,1)$; $y(4) = 4 \implies B(4,4)$.

$y - 1 = \frac{4-1}{4-2}(x-2) = \frac{3}{2}x - 3 \implies y = \frac{3}{2}x - 2$.

$P = \int_2^4 \left(\frac{3}{2}x - 2 - \frac{1}{4}x^2\right)dx = \left(\frac{3}{4}x^2 - 2x - \frac{1}{12}x^3\right)\Big|_2^4 = \frac{3}{4}\cdot 16 - 2\cdot 4 - \frac{1}{12}\cdot$
$64 - \frac{3}{4}\cdot 4 + 2\cdot 2 + \frac{1}{12}\cdot 8 = 12 - 8 - \frac{16}{3} - 3 + 4 + \frac{2}{3} = 5 - \frac{14}{3} = \frac{1}{3}$.