

$$\text{Area} = \int_1^3 (4x-2) - (x^2+1) dx$$

since the graph of $4x-2$ is above x^2+1

$$\text{so } \int_1^3 4x-2-x^2-1 dx = \int_1^3 4x-x^2-3 dx$$

$$= 2x^2 - \frac{x^3}{3} - 3x \Big|_1^3$$

$$= (18 - 9 - 9) - \left(2 - \frac{1}{3} - 3\right)$$

$$= \left(\frac{4}{3}\right)$$