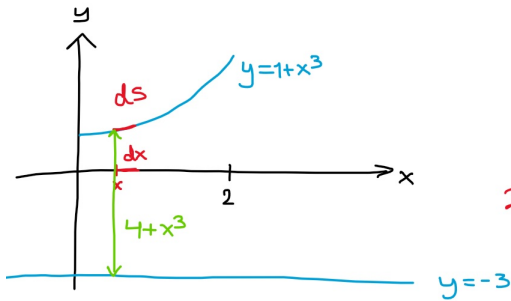
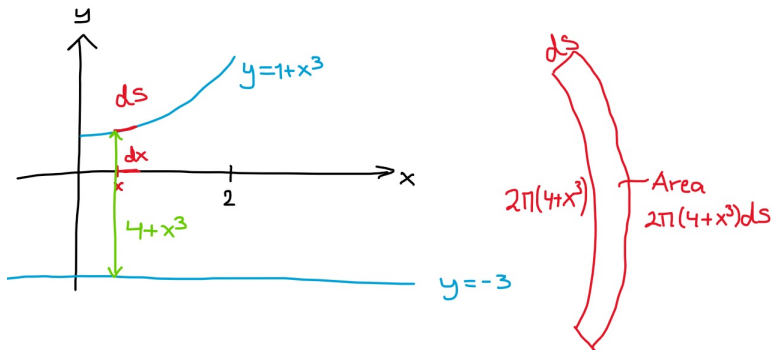


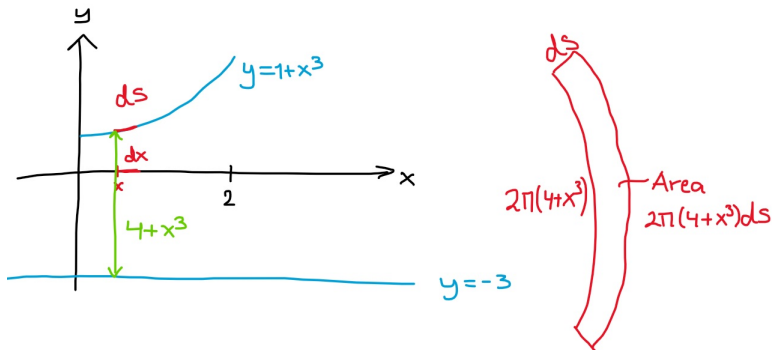
Ange en integralformel för arean av den yta som uppstår då kurvan $y = 1 + x^3$, $0 \leq x \leq 2$ roteras ett varv runt $y = -3$.



A hand-drawn diagram of a curved strip representing a surface element. The strip is outlined in red. The top edge is labeled ds . To the left of the strip is the expression $2\pi(4+x^3)$. To the right of the strip is the expression $\text{Area } 2\pi(4+x^3)ds$.



$$ds = \sqrt{1 + y'(x)^2} dx = \sqrt{1 + 9x^4} dx.$$



$$ds = \sqrt{1 + y'(x)^2} dx = \sqrt{1 + 9x^4} dx.$$

$$\text{Area: } \int_0^2 2\pi(4 + x^3)\sqrt{1 + 9x^4} dx.$$