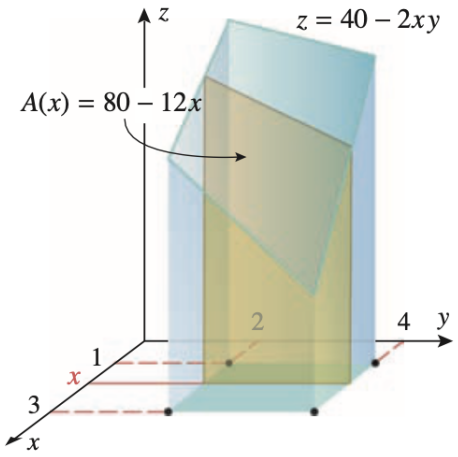
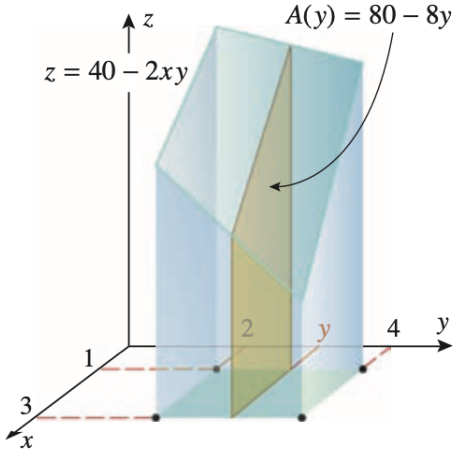
Consider $\iint_R (40 - 2xy)\,dA$ where $R = [1, 3] \times [2, 4]$.

$$\iint_R 40 - 2xy\,dA = \int_1^3 \left(\int_2^4 40 - 2xy\,dy \right) dx = \int_1^3 A(x)\,dx$$



$$\iint_R 40 - 2xy\,dA = \int_2^4 \left(\int_1^3 40 - 2xy\,dx \right) dy = \int_2^4 A(y)\,dy$$



For more visuals, see https://instruct.math.lsa.umich.edu/lecturedemos/ma215/docs/15_2/examples.html and https://instruct.math.lsa.umich.edu/lecturedemos/ma215/docs/15_3/examples.html.