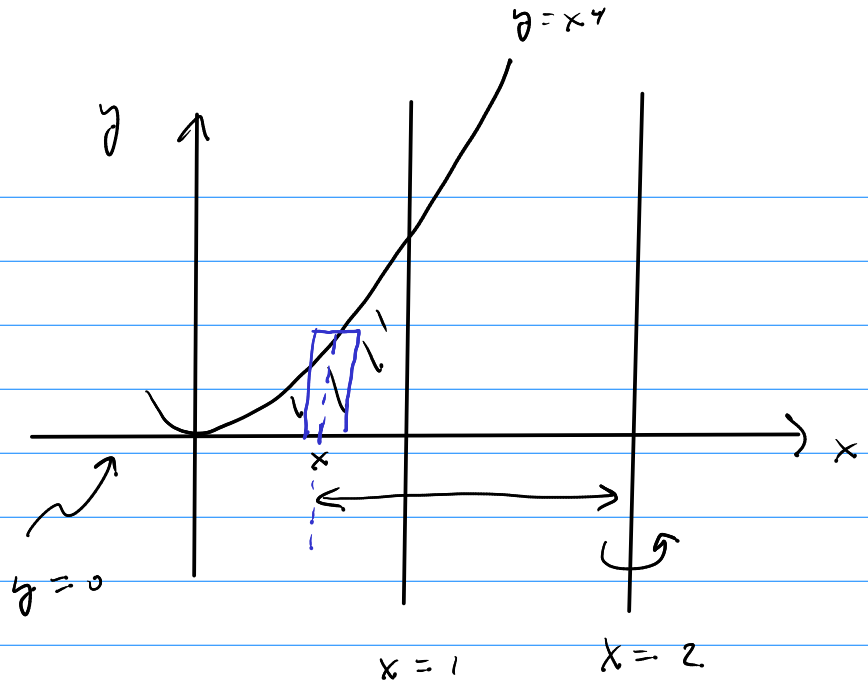
viSiiiQd

A1



$$\text{Volume} = \int_0^1 2\pi (2-x)\, x^4 \, dx$$

1pt 1pt 1pt 1pt 1pt for dx

A2

① Find k.

$$10 = k\,.05$$

2 pt

$$\Rightarrow k = \frac{10}{.05} = \frac{10}{5/100} = 200$$

② Find work.

$$W = \int_{.02}^{.1} 200x\,dx = 100x^2 \Big|_{.02}^{.1}$$

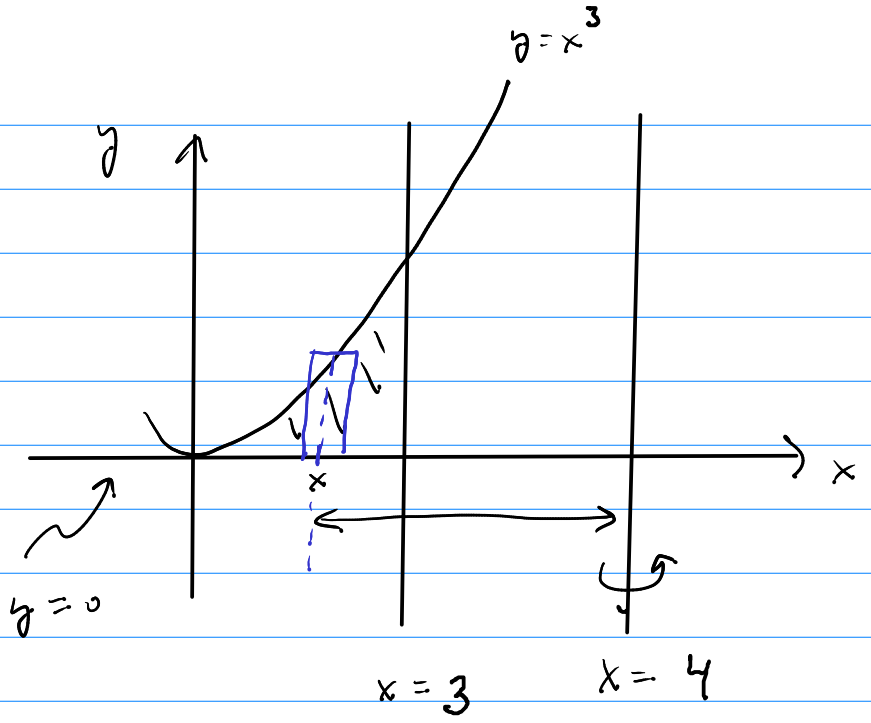
1 pt

2 pt

$$= 100\left((.1)^2 - (.02)^2\right) J$$

viSiiiQk

B1



1pt 1pt

$$\text{Volume} = \int_{0}^{3} 2\pi\,(4-x)\,x^{3}\,dx$$

1pt 1pt 1pt for dx

B2

① Find k.

$$5 = k(.05)$$

2pts

$$\Rightarrow k = \frac{5}{.05} = 100$$

② Find work.

1pt

$$W = \int_{.02}^{.07} 100x\,dx = 50x^2 \Big|_{.02}^{.07}$$

2pts

$$= 50\left((.07)^2 - (.02)^2\right) J$$