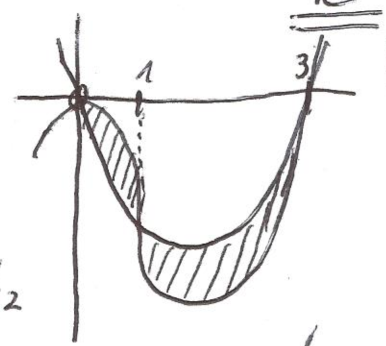
1

אינפי ק' – פתרון תרגיל 4

(1) א

$y=x^2-3x$, $y=x^3-3x^2$:

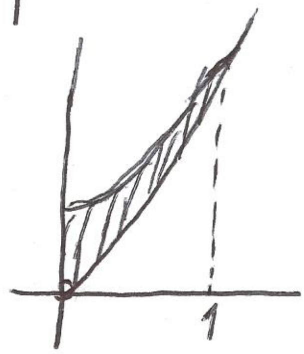
$$S=\int_0^1\left[(x^3-3x^2)-(x^2-3x)\right]dx+\int_1^3\left[(x^2-3x)-(x^3-3x^2)\right]dx=3\tfrac{1}{12}$$



(2)

$y=e^x$, $y=ex$, ציר y :

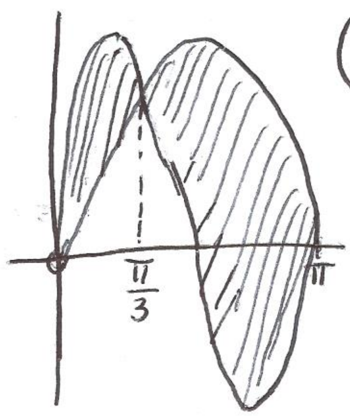
$$S=\int_0^1(e^x-ex)\,dx=e/2+1$$



(3)

$y=\sin x$, $y=\sin 2x$, $0\le x\le\pi$:

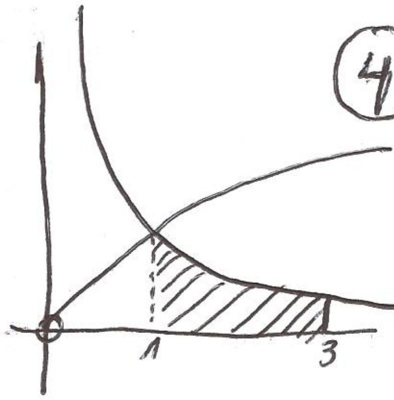
$$S=\int_0^{\pi/3}(\sin 2x-\sin x)\,dx+\int_{\pi/3}^{\pi}(\sin x-\sin 2x)\,dx=2\tfrac{1}{2}$$



(4)

$y=\sqrt{x}$, $y=1/x^2$, $x=3$, ציר x :

$$S=\int_0^1\sqrt{x}\,dx+\int_1^3 1/x^2\,dx=\tfrac{2}{3}\sqrt{27}=2\sqrt{3}=\sqrt{18}$$



(5)

$y=x^2-2x$, $y=4-x^2$:

$$S=\int_{-1}^{2}\left[(4-x^2)-(x^2-2x)\right]dx=9$$