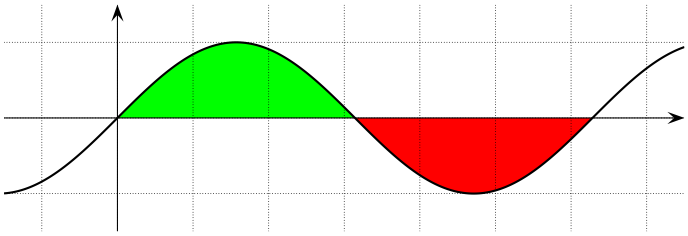
11.4



1) $\displaystyle\int_0^{2\,\pi} \sin(x)\,dx = -\cos(x)\Big|_0^{2\,\pi} = -\cos(2\,\pi) - \big(-\cos(0)\big) = -1 + 1 = 0$

2) $\displaystyle\int_0^{\pi} \sin(x)\,dx - \int_{\pi}^{2\,\pi} \sin(x)\,dx = \Big(-\cos(x)\Big|_0^{\pi}\Big) - \Big(-\cos(x)\Big|_{\pi}^{2\,\pi}\Big) =$

$\Big(-\cos(\pi) - \big(-\cos(0)\big)\Big) - \Big(-\cos(2\,\pi) - \big(-\cos(\pi)\big)\Big) =$

$\Big(-(-1) - (-1)\Big) - \Big(-1 - \big(-(-1)\big)\Big) = 2 - (-2) = 4$