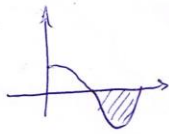


2.62  
74



$$V = \int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} g^2 dx = \int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} \frac{1 + \sin 2x}{2} dx = \frac{1}{2} \left[ \frac{x}{2} + \frac{\sin 2x}{4} \right]_{\frac{\pi}{2}}^{\frac{3\pi}{2}} = \left[ \left( \frac{3\pi}{4} + 0 \right) - \left( \frac{\pi}{4} + 0 \right) \right] \frac{1}{2} = \frac{1}{2} \pi^2$$