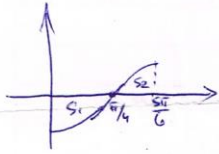


2.63
93



$$\sin x - gx = 0 \quad ; \quad x \in [0, \pi/6] \text{ (min } \pi/2)$$
$$x = \frac{\pi}{4}, \frac{3\pi}{4}, \dots$$

$$S_1 = \int_0^{\pi/4} (gx - \sin x) dx = \left. gx - \sin x \right|_0^{\pi/4} = \sqrt{2} - 1$$

$$S_2 = \int_{\pi/4}^{\pi/6} (\sin x - gx) dx = \left. -\cos x - \frac{gx^2}{2} \right|_{\pi/4}^{\pi/6} = \left(\frac{\sqrt{3}}{2} - \frac{1}{2} \right) - (-\sqrt{2}) = \frac{\sqrt{3}}{2} - \frac{1}{2} + \sqrt{2}$$

$$S_1 + S_2 = 2\sqrt{2} + \frac{\sqrt{3}}{2} - \frac{1}{2} - 1 = \frac{1}{2}(4\sqrt{2} + \sqrt{3} - 3)$$