

4.14  
1.5

$$y = 8 \sin x + 8 \sin^2 x = 8 \sin x (1 + \sin x)$$

(1)  $(0, 0)$   ~~$(\frac{\pi}{2}, 0)$~~   $(\frac{3\pi}{2}, 0)$   $(\pi, 0)$   $(2\pi, 0)$

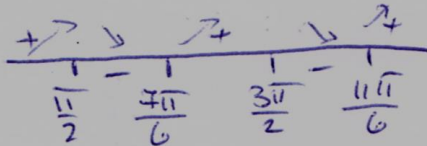
(2)  $y' = 8 \cos x + 16 \sin x \cos x = 8 \cos x (1 + 2 \sin x)$

$$\frac{\pi}{2} + 11\pi <$$

$$\sin x = -\frac{1}{2}$$

$$x = -\frac{\pi}{6} + 2k\pi$$

$$x = \frac{7\pi}{6} + 2k\pi$$



$$\frac{11\pi}{6} < x < 2\pi, \quad \frac{7\pi}{6} < x < \frac{3\pi}{2}, \quad 0 < x < \frac{\pi}{2} \quad \text{max}$$

$$\frac{\pi}{2} < x < \frac{7\pi}{6}, \quad \frac{3\pi}{2} < x < \frac{11\pi}{6} \quad \text{min}$$

$$\max\left(\frac{\pi}{2}, 16\right) \quad \max\left(\frac{3\pi}{2}, 0\right)$$

$$\min\left(\frac{7\pi}{6}, -4\right) \quad \min\left(\frac{11\pi}{6}, -4\right)$$

