

d.) Need  $f''(x) = 0$ .

#50 (2)

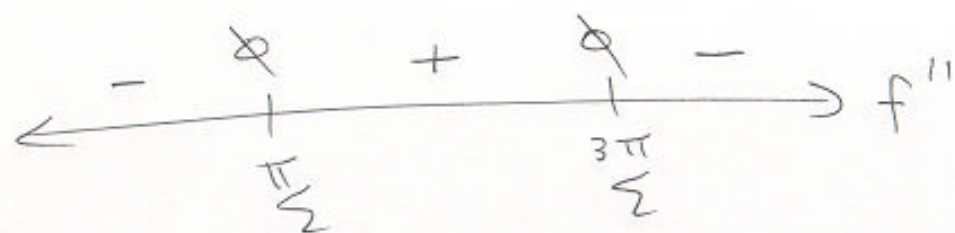
$$f''(x) = \frac{2(\cos x)(\sin x - 1)}{(2 + \sin x)^3} = 0 \implies$$

$$\cos x = 0$$

$$x = \frac{\pi}{2}, \frac{3\pi}{2}$$

$$\text{or } \sin x - 1 = 0$$

$$\sin x = 1 \implies x = \frac{\pi}{2}$$



$f$  is concave up for:  $(\frac{\pi}{2}, \frac{3\pi}{2})$

$f$  is concave down for:  $(0, \frac{\pi}{2}) \cup (\frac{3\pi}{2}, 2\pi)$

e.)  $(\frac{\pi}{2}, \phi) \neq (\frac{3\pi}{2}, \phi)$  points of inflection

f.)  $f''(\frac{7\pi}{6}) > 0 \implies (\frac{7\pi}{6}, -0.58)$  Local min.

$f''(\frac{11\pi}{6}) < 0 \implies (\frac{11\pi}{6}, 0.58)$  Local Max.