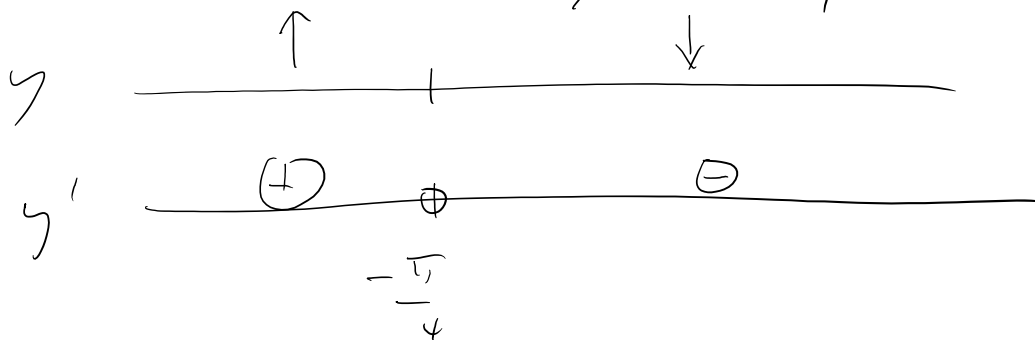


$$(47) \quad y = e^{-x} \cos x \quad \left[ -\frac{\pi}{2}, \frac{\pi}{2} \right]$$

$$\frac{dy}{dx} = e^{-x} (-\sin x) - e^{-x} \cos x$$

$$- e^{-x} (\sin x + \cos x) = 0$$

$$x = -\pi/4$$

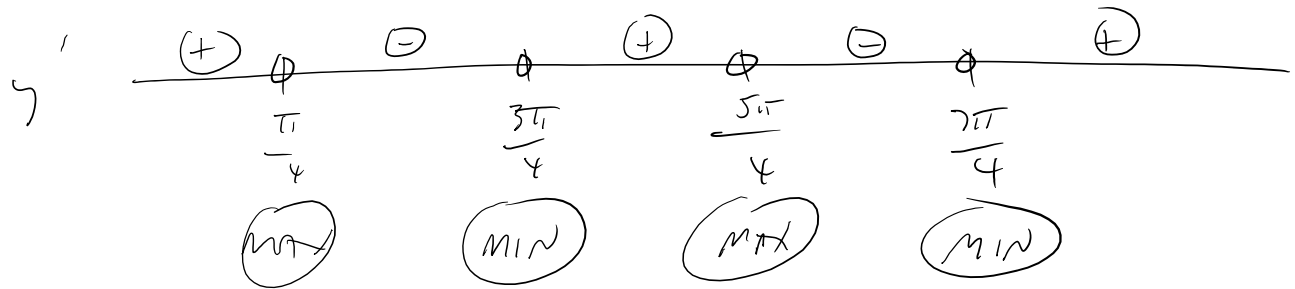
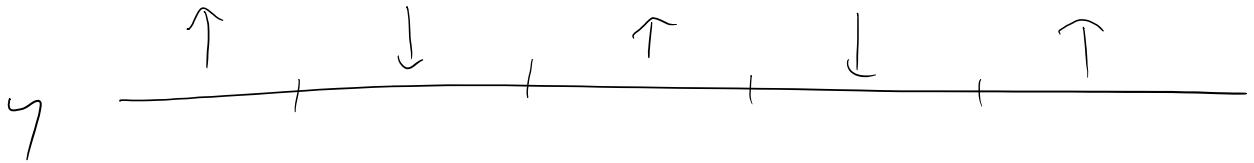


MAX at  
 $x = -\pi/4$

(41)  $y = \sin \theta \cos \theta$   $[0, 2\pi)$

$$y' = \cos^2 \theta - \sin^2 \theta = 0$$
$$\cos^2 \theta = \sin^2 \theta$$

$$\theta = \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}$$



(J1)

$$y = x - \ln x$$

$$x > 0$$

$$y' = 1 - \frac{1}{x} = 0$$

$$x = 1$$

