

HWS 10 #11

$$f(x) = e^{\cos(x)} \rightarrow \frac{d}{dx}(e^{\star}) = \underbrace{e^{\star}} \cdot \frac{d}{dx}(\star)$$

$$f'(x) = e^{\cos(x)} \cdot \frac{d}{dx} \cos(x)$$

$$= e^{\cos(x)} \cdot (-\sin(x)) \checkmark$$

$$\leftarrow -e^{\cos(x)} \sin(x)$$

$$f''(x) = -e^{\cos(x)} \left( \frac{d}{dx} \sin(x) \right) - \underbrace{\frac{d}{dx} (e^{\cos(x)})}_{f'(x)} \cdot \sin(x)$$

$$= -e^{\cos(x)} \cos(x) + \underbrace{(e^{\cos(x)} \cdot (+\sin x))}_{f'(x)} \sin(x) \checkmark$$

$$= -e^{\cos(x)} \cos(x) + \sin^2(x) e^{\cos(x)}$$

$$12) \tan(\sec(x))$$

$$13) \csc(e^{2x})$$

HW10 #12

$$f(x) = \underline{\underline{\tan}}(\sec(x))$$

$$f'(x) = \sec^2(\sec(x)) \cdot \underbrace{\frac{d}{dx} \sec(x)}_{\sec(x)\tan(x)}$$

$$= \sec^2(\sec(x)) \sec(x)\tan(x) \checkmark$$

AW 10 #13

$$f(x) = \csc(e^{2x})$$

$$\frac{d}{dx} \csc(\star) = -\csc(\star) \cot(\star)$$

$$f'(x) = -\csc(e^{2x}) \cot(e^{2x}) \cdot \frac{d}{dx} e^{2x}$$



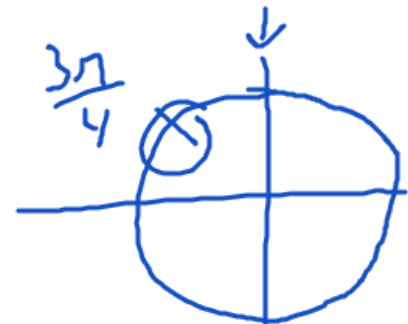
$$e^{2x} \cdot \frac{d}{dx} (2x)$$

$$= -\csc(e^{2x}) \cot(e^{2x}) \cdot 2e^{2x}$$

HW 9 #2

$$f(x) = -2\sin(x)$$

$$\textcircled{a} \quad x = \frac{3}{4}\pi = \frac{3\pi}{4}$$



$$1) \left(\frac{3\pi}{4}, \quad\right) \leftarrow f\left(\frac{3\pi}{4}\right) = -2\sin\left(\frac{3\pi}{4}\right) = -2\left(\frac{\sqrt{2}}{2}\right) = -\sqrt{2}$$

$$2) f'\left(\frac{3\pi}{4}\right) = -2\cos\left(\frac{3\pi}{4}\right) = +2\left(\frac{\sqrt{2}}{2}\right) = \sqrt{2} = m$$

$$\left(\frac{3\pi}{4}, \sqrt{2}\right)$$

$$f'(x) = -2\left(\frac{d}{dx} \sin(x)\right) \\ = -2\cos(x)$$

$$y - \sqrt{2} = \sqrt{2}\left(x - \frac{3\pi}{4}\right)$$

