

1.1]

● 14.) $y'' + y = \tan(x)$

$$y = -\cos(x) \ln[\sec(x) + \tan(x)]$$

$$y' = \frac{d}{dx} [-\cos(x) \ln[\sec(x) + \tan(x)]]$$

$$= \sin(x) \ln[\sec(x) + \tan(x)] - \cos(x) \sec(x)$$

$$= \sin(x) \ln(\sec(x) + \tan(x)) - 1$$

$$y'' = \cos(x) \ln(\sec(x) + \tan(x)) + \sin(x) \sec(x)$$

$$= \cos(x) \ln(\sec(x) + \tan(x)) + \tan(x)$$

$$y'' + y = \cos(x) \ln(\sec(x) + \tan(x)) + \tan(x) + (-\cos(x) \ln(\sec(x) + \tan(x)))$$

$$= \tan(x)$$