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MATH 3306

Quiz 5.3

- (1) Consider the initial value problem below has a series solution centered at zero of  $y = \phi(x)$ . Determine  $\phi'(0)$ ,  $\phi''(0)$  and  $\phi^{(4)}(0)$ .

$$y'' + x^2y' + \cos(x)y = 0, \quad y(0) = 2, \quad y'(0) = 3.$$