

MAC2312: Calculus 2 - Section 3

Quiz 11: 9.1 Modeling with Differential Equations

June 23, 2015

1. Select the function that is a solution of the differential equation $y'' + y = \sin x$.

A. $y = \sin x$

B. $y = \cos x$

C. $y = \frac{1}{2}x \sin x$

D. $y = -\frac{1}{2}x \cos x$

A $y'' + y = -\sin x + \sin x = 0 \neq \sin x$

B $y'' + y = -\cos x + \cos x = 0 \neq \sin x$

C $y'' + y = (\cos x - \frac{1}{2}x \sin x) + \frac{1}{2}x \sin x \neq \sin x$

D $y'' + y = (\sin x + \frac{1}{2}x \cos x) - \frac{1}{2}x \cos x = \sin x$