

Daily ODE - 21/7/2022

Which of the equations below are linear (in $y(x)$)?

A. $e^x \sinh(x) y^{(9)} - \frac{e^{\tan(x)}}{\cosh(x)} y'' + y = \arcsin(x^2)$

B. $\frac{1}{xy} + y' = y''$

C. $\cos(x) y'' - xy' + xy^2 = 0$

D. $x^2 y^{(5)} - e^x y'' + \cot(x) y = \sin(x) e^x$

E. $xy \sin(x) dx + \cos(x) dy = 0$

F. $xy \sin(y) dx + \cos(x) dy = 0$

$x \sin(x) y + \cos(x) y' = 0$ Linear

$xy \sin(y) + \cos(x) y' = 0$
NOT linear