

Math 3331 Exercises

Determine whether the following equations are homogeneous:

1. $-ydx + (x + \sqrt{xy})dy = 0$,

2. $(x + ye^{y/x})dx - xe^{y/x}dy = 0$,

3. $ydx + x(\ln x - \ln y - 1)dy = 0$,

4. $\frac{dy}{dx} = \frac{x+3y}{3x+y}$,

5. $\frac{dy}{dx} = \frac{y^2+y}{x^2+x}$,

6. $\frac{dy}{dx} = \frac{1-x-y}{x+y}$,

7. $x\frac{dy}{dx} + y = \frac{1}{y^2}$