

Assignment 1005, 14 July 2020

Find the solution of the following equations. For each equation, first, determine the type of the category that the equation belongs to.

1. $\frac{y}{x} \cos \frac{y}{x} dx - \left(\frac{x}{y} \sin \frac{y}{x} + \cos \frac{y}{x} \right) dy = 0$

2. $x(1 - y^2)dx + y(8 - x^2)dy = 0$

3. $(x^2 - x + y^2)dx - (e^y - 2xy)dy = 0$

4. $2x \sin 3y dx + 3x^2 \cos 3y dy = 0$

5. $(x \ln x - 2xy^3)dx + 3x^2y^2dy = 0$

6. $dx + \left(\frac{x}{y} - \sin y \right) dy = 0$

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