

EDDE. PROBLEM SET 4

1. Solve the differential equations:

a) $(x + 2y)y' + x + y = 0$;

b) $(x - 2y)y' - x + y = 0$;

c) $(x - 2y)y' + x^2 + y = 0$;

d) $2y(x - 1)y' + 3x^2 + y^2 = 0$.

2. Solve the differential equations:

a) $(y^2 - 4xy - 2x^2)y' + x^2 - 4xy - 2y^2 = 0$;

b) $(3y^2 - 2x)y' + 3x^2 - 2y = 0$;

c) $(x^2 + 6xy - 3y^2)y' + 2xy + 3y^2 = 0$;

d) $e^y - (2y - xe^y)y' = 0$.

3. Solve the differential equations:

a) $x^2 + y - xy' = 0$;

b) $xy^2 + y - xy' = 0$;

c) $y^2 + (xy - 1)y' = 0$;

d) $x \sin y + y \cos y + (x \cos y - y \sin y)y' = 0$.