

1. Solve following differential equations by converting them to Seperable Equations.

(a) $y' = x - y$.

(b) $y' = (x + y + 1)^3$.

(c) $\frac{dy}{dx} = (x + y + 1)^2$.

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

(e) $(1 + y') \cos(x + y) = yy'$.

2. Reduce following differential equations to seperable ones or homogeneous ones and then find their general solutions.

(a) $(x + y)y' = x + y - 2$.

(b) $(x + 2y + 1)dx + (2x + 4y + 3)dy = 0$.

(c) $(x + 2y - 4)dx + (2x + 3y - 7)dy = 0$.

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