

Mathematical Methods II

Workshop 1

In this first workshop, you should try and solve the following differential equations. The page of the textbook where these are solved explicitly is given in square brackets.

(1) $xy' + 3x + y = 0$ [pg. 472].

(2) $y' = -\frac{2}{y} - \frac{3y}{2x}$ [pg. 474].

(3) $y' + 2xy = 4x$ [pg. 475].

(4) $y' = -\frac{1}{2xy} \left[y^2 + \frac{2}{x} \right]$. Solve it as an isobaric equation. [pg. 477]

(5) $y' + \frac{y}{x} = 2x^3y^4$. Solve it as a Bernoulli equation. [pg. 478]