

Problem 1.32

Find a closed-form solution to the following Riccati equations:

(a) $xy' + xy^2 + x^2/2 = \frac{1}{4}$;

(b) $x^2y' + 2xy - y^2 = A$;

(c) $y' + y^2 + (\sin 2x)y = \cos 2x$;

(d) $xy' - 2y + ay^2 = bx^4$;

(e) $y' + y^2 + (2x + 1)y + 1 + x + x^2 = 0$.