

Övningarna

Lös differentialekvationerna:

$$17.2.1 \quad y'' + 2y' - 8y = 1 - 2x^2$$

$$17.2.3 \quad 9y'' + y = e^{2x}$$

$$17.2.5 \quad y'' - 4y' + 5y = e^{-x}$$

$$17.2.7 \quad y'' - 2y' + 5y = \sin(x), y(0) = 1, y'(0) = 1$$

$$17.2.9 \quad y'' - y' = xe^x, y(0) = 2, y'(0) = 1$$

Svar

$$17.2.1 \quad y = C_1 e^{2x} + C_2 e^{-4x} + x^2/4 + x/8 - 1/32$$

$$17.2.3 \quad y = C_1 \cos(x/3) + C_2 \sin(x/3) + e^{2x}/37$$

$$17.2.5 \quad y = e^{2x}(C_1 \cos(x) + C_2 \sin(x)) + e^{-x}/10$$

$$17.2.7 \quad y = e^x(9/10 \cos(2x) - 1/20 \sin(2x)) + \cos(x)/10 + \sin(x)/5$$

$$17.2.9 \quad y = e^x(x^3/2 - x + 2)$$