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курс-1-ви

Специалност-КСТ

вид обучение-заочно

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изпитна дисциплина-ВМ2

задача 3

$$a = 5 \quad b = 0 \quad c = 1$$

$$l = 2.1 - 3(0 + 1) = -1$$

$$m = 1 - 2.0 = -1$$

$$-1y'' + 5py' + 1y = 0$$

$$-1t^2 + 5t + 1t = 0$$

$$a = -1 \quad b = 5 \quad c = 1$$

$$D = 5^2 - 4 \cdot (-1) \cdot 1 = 29$$

$$t_{1,2} = \frac{-5 \pm \sqrt{29}}{2 * (-1)} = \frac{-5 \pm \sqrt{29}}{-2} = \frac{5}{2}$$

$$P = (Ax + B)e^{\frac{5}{2}}$$

Задача 2

$$f(x, y) = x^{l+a}(b \operatorname{arctg} y + (1 - b) \arcsin y)$$

$$f(x, y) = x^4(0 \operatorname{arctg} y + (1) \arcsin y)$$

$$f_x = (x^4(0 \operatorname{arctg} y + (1) \arcsin y))_x = 4x^3 0 \operatorname{arctg} y + 1 \arcsin y$$

$$f_y = (x^4(0 \operatorname{arctg} y + (1) \arcsin y))_y = x^4 \frac{1}{1 + y^2} y + \frac{1}{\sqrt{1 - y^2}} y$$

$$= x^4 \operatorname{arctg} 1 + \arcsin 1$$

$$f_{xx} = 12x \operatorname{arctg} y + 1 \arcsin y$$

$$f_{xy} = (4x^3 0 \operatorname{arctg} y + 1 \arcsin y)_y = 4x^3 \frac{1}{1 + y^2} + \frac{1}{\sqrt{1 - y^2}} y$$

$$= 4x^3 1 \operatorname{arctg} + 1 \arcsin$$

$$f_{yy} = (x^4 \operatorname{arctg} 1 \arcsin 1)_y = x^4 \frac{1}{1 + 1^2} + \frac{1}{\sqrt{1 - 1^2}} = x^4 \frac{1}{2}$$

Задача 1

$$\int\limits_{-1}^1 \frac{x^{-1} f(x)}{1+x^5} dx =$$