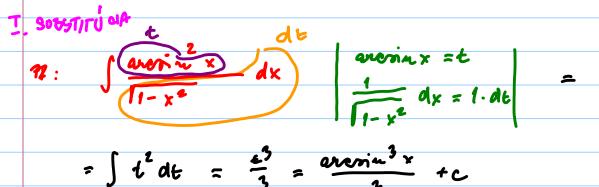
Matematická analýza Cvičenie 8 ZS 8.11.2022 10:00

Note Title 08/11/2022

PEUZCITY INTEGRAL



II. PER PARTES

$$A = \arcsin^2 x \quad A = devision x \cdot \frac{1}{\sqrt{1-x^2}}$$

$$A' = \frac{1}{\sqrt{1-x^2}} \quad A' = \int \frac{1}{\sqrt{1-x^2}} \, dx$$

$$\int \int x \, du \, (2x) \, dx$$

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=
$$\frac{2}{3} \int_{x^{3}} \cdot \ln(2x) - \int_{3}^{2} \int_{x^{3}} \cdot \frac{1}{x} dx =$$

=
$$\frac{1}{3}\sqrt{x^3} - a_{11}(2x) - \frac{2}{3}\sqrt{\frac{x^3}{x^2}} dx =$$

=
$$\frac{2}{3} \sqrt{3} \cdot \ln(2x) - \frac{2}{3} \cdot \frac{2}{3} \sqrt{x^3} + C = \frac{2}{5} \sqrt{x^3} \left(\ln(2x) - \frac{2}{3} \right) + C$$

$$PR : T = \int \frac{x^{3} + 3}{x^{2} - 3x} dx = \frac{\begin{pmatrix} x^{3} + 3 \end{pmatrix} : (x^{2} - 3x) = x + 3}{-x^{3} + 3x^{2}}$$

$$0 + 3x^{2}$$

$$-3x^{2} + 9x$$

$$9x + 73$$

$$2xy = x + 3$$

$$= \int x + 3 + \frac{5x + 3}{x^2 - 3x} dx = \int x + 3 dx + \int \frac{9x + 5}{x(x - 3)} dx$$

1.
$$\int x + 3 dx = \frac{x^2}{4} + 3x + c$$

II.
$$\frac{9x+5}{x(x-3)} = \frac{A}{x} + \frac{B}{x-3} / x(x-3)$$

$$\int \frac{6x+3}{x(x-3)} dx = \int \frac{-1}{x} dx + \int \frac{10}{x-3} dx =$$

11.
$$\begin{vmatrix} x-3 = t \\ dx = dt \end{vmatrix} = 10 \int \frac{1}{t} dt = 10 \text{ Au } |t| = 10 \text{ Pu} |x-3|$$

$$I = 1. + 11. = 1. + 11. + 11. = \frac{x^2}{2} + 3x - \ln|x| + 10 \ln|x - 3| + c^{2}$$

$$= \frac{x^2}{2} + 3x + \ln \frac{|x - 9|^{10}}{|x|} + c$$