

RAZVIJANJE F-JA 1 PROMENLJIVE U RED

a) sin i cos

$$f(x) = \frac{a_0}{2} + \sum_{n=1}^{\infty} \left(a_n \cos \frac{2n\pi x}{L} + b_n \sin \frac{2n\pi x}{L} \right)$$

$$a_0 = \frac{2}{L} \int_x^{x+L} f(x) dx;$$

$$a_n = \frac{2}{L} \int_x^{x+L} f(x) \cos \frac{2n\pi x}{L} dx$$

$$b_n = \frac{2}{L} \int_x^{x+L} f(x) \sin \frac{2n\pi x}{L} dx$$

b) parna f-ja: $f(x)=f(-x)$

$$f(x) = \frac{a_0}{2} + \sum_{n=1}^{\infty} a_n \cos \frac{2n\pi x}{L}$$

$$a_0 = \frac{4}{L} \int_0^{L/2} f(x) dx;$$

$$a_n = \frac{4}{L} \int_0^{L/2} f(x) \cos \frac{2n\pi x}{L} dx$$

c) neparna f-ja: $f(-x)=-f(x)$

$$f(x) = \sum_{n=1}^{\infty} b_n \sin \frac{2n\pi x}{L}$$

$$b_n = \frac{4}{L} \int_0^{L/2} f(x) \sin \frac{2n\pi x}{L} dx$$

RAZVIJANJE F-JA 2 PROMENLJIVE U RED

$$p(x, y) = \sum_{m=1}^{\infty} \sum_{n=1}^{\infty} \left(A_{mn} \sin \frac{m\pi x}{a} \sin \frac{n\pi y}{b} + B_{mn} \cos \frac{m\pi x}{a} \cos \frac{n\pi y}{b} \right)$$

-neparni trigonometrijski red

$$p(x, y) = \sum_{m=1}^{\infty} \sum_{n=1}^{\infty} \left(A_{mn} \sin \frac{m\pi x}{a} \sin \frac{n\pi y}{b} \right)$$

$$A_{mn} = \frac{4}{ab} \int_0^a \int_0^b p(x, y) \sin \frac{m\pi x}{a} \sin \frac{n\pi y}{b} dx dy$$