

6. DOMAČA NALOGA

6.1 Z uporabo L'Hospitalovega pravila izračunaj limiti

$$\lim_{x \rightarrow 3} \frac{\arcsin(x-3)}{x^2-3x}$$
$$\lim_{x \rightarrow \pi/2} \frac{\cos(x) + x - \pi/2}{(x - \pi/2)^3}$$

6.2 Izračunaj limiti

$$\lim_{x \rightarrow 2} \frac{2x - x^2}{\arctg(x-2)}$$
$$\lim_{x \rightarrow \pi} \frac{\sin(x) + (x - \pi)}{(x - \pi)^3}$$

6.3 Izračunaj integrale na intervalu $[1, 2]$ za naslednje funkcije:

$$f_1(x) = x^3 - 9x^2,$$
$$f_2(x) = 4x - 4x^2 - x^3,$$
$$f_3(x) = \frac{2x+4}{x^2},$$
$$f_4(x) = \frac{x^2+3x+4}{x},$$
$$f_5(x) = x \cos(x),$$
$$f_6(x) = 2 \cos(3x) - 1,$$
$$f_7(x) = -\sin(2x),$$
$$f_8(x) = (2x+1)e^{-3x},$$
$$f_9(x) = x^2 e^{2x+1} + 3,$$
$$f_{10}(x) = e^{3x} - 2,$$
$$f_{11}(x) = \log(5x+1),$$
$$f_{12}(x) = 2 \log(x) + 1,$$

6.4 Izračunaj ploščino območja med krivuljama

$$f(x) = 4 + x - x^2 \text{ in } g(x) = 8 + 7x + x^2,$$

$$f(x) = 8 + 5x - x^2 \text{ in } g(x) = 4 + 3x + x^2,$$

$$f(x) = 8 + x \text{ in } g(x) = 4 - x + 2x^2.$$