PINFOSS 22
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Calculus vk.36

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2.1 *Määritä*

(a

$$\lim_{x \to -2}(3x + 4)$$
$$= (3(-2) + 4)$$
$$= \lim_{x \to -2} = -2$$

(b

$$\lim_{x \to 3}(x^2 e^x)$$
$$= 3^2 e^3$$
$$= 9e^3$$

(c

$$\lim_{x \to \frac{\pi}{4}}(\frac{sin2t}{cos4t - 1})$$
$$= \frac{sin(2\frac{\pi}{4})}{cos(4\frac{\pi}{4} - 1)}$$
$$= \frac{1}{-2}$$
$$\lim_{x \to \frac{\pi}{4}} = -\frac{1}{2}$$

3.1 *Määritä*

$$\lim_{x\to 5} \frac{x-5}{x^2-4x-5}$$

$$\frac{x-5}{(x+1)(x-5)}$$

$$\frac{1}{x+1}$$

$$\frac{1}{5+1}$$

$$\lim_{x\to 5} = \frac{1}{6}$$

4.1 *Määritä*

$$\lim_{x\to\infty} = \frac{2x+3}{x-2}$$

$$\frac{\frac{2x}{x}+\frac{3}{x}}{\frac{x}{x}-\frac{2}{x}}$$

$$\frac{2+\frac{3}{x}}{1-\frac{2}{x}}$$

$$2+\frac{3}{x}=2 \quad 1-\frac{2}{x}=1$$

$$\lim_{x\to\infty} = \frac{2}{1} = 2$$

5.1 *Määritä*