

1. Mix SCO 3.2.4 16 dischuti: 1.2 Hb SISTEM OPERATWO

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$$\lim_{x \rightarrow +\infty} \frac{2x^3 - 5x \log_3 x + 2x \sqrt{x} + 1}{2x^2 - 4x \log_3 x + \sqrt[3]{x} - 4} \left(3^{\frac{x+1}{x}} - 3^{\cos \frac{1}{x}} \right) =$$

$$= \lim_{x \rightarrow +\infty} \frac{2x^3 - 5x \log_3 x + 2x \sqrt{x} + 1}{2x^2 - 4x \log_3 x + \sqrt[3]{x} - 4} \left(3^{1 + \frac{1}{x}} - 3^{\cos \frac{1}{x}} \right) =$$

$$= \lim_{x \rightarrow +\infty} \frac{x \left(2 - \frac{5 \log_3 x}{x^2} + \frac{2}{\sqrt{x} \cdot \log_3 x} + \frac{1}{x \log_3 x} \right)}{2 - 4 + \frac{\sqrt[3]{x}}{x^2 \log_3 x} - \frac{4}{x^2 \log_3 x}} 3 \left(3^{\frac{1}{x}} - 3^{\cos \frac{1}{x} - 1} \right) =$$

$$= \lim_{x \rightarrow +\infty} 3x \left[\left(3^{\frac{1}{x}} - 1 \right) - \left(3^{\cos \frac{1}{x} - 1} - 1 \right) \right] =$$

$$= \lim_{x \rightarrow +\infty} 3 \left[\frac{3^{\frac{1}{x}} - 1}{\frac{1}{x}} - x \left(3^{\cos \frac{1}{x} - 1} - 1 \right) \right] =$$

$$= 3 \log_3 3 + \lim_{x \rightarrow +\infty} x \left(\frac{3^{\cos \frac{1}{x} - 1} - 1}{\cos \frac{1}{x} - 1} \left(\cos \frac{1}{x} - 1 \right) \right) =$$

$$= 3 \log_3 3 + \lim_{x \rightarrow +\infty} \frac{3^{\cos \frac{1}{x} - 1} - 1}{1} \left(\frac{1 - \cos \frac{1}{x}}{1} \right) = 3 \log_3 3 + 0$$