

## 重點十之二 老大比較法：指數函數分式

例題 1.

Find the following limits.

$$(1) \lim_{x \rightarrow \infty} \frac{2 \cdot 5^x - 3 \cdot 2^x}{7 \cdot 3^x + 2 \cdot 4^x} \quad (2) \lim_{x \rightarrow \infty} \frac{2 \cdot 5^x - 3 \cdot 2^x}{7 \cdot 5^x + 2 \cdot 4^x} \quad (3) \lim_{x \rightarrow \infty} \frac{2 \cdot 3^x - 3 \cdot 2^x}{7 \cdot 5^x + 2 \cdot 4^x}$$

**解**

例題 2. (精選範例 10-2-1)

Find the following limits.

$$(1) \lim_{x \rightarrow -\infty} \frac{2 \cdot 5^x - 3 \cdot 2^x}{7 \cdot 3^x + 2 \cdot 4^x} \quad (2) \lim_{x \rightarrow -\infty} \frac{2 \cdot 5^x - 3 \cdot 2^x}{7 \cdot 5^x + 2 \cdot 4^x} \quad (3) \lim_{x \rightarrow -\infty} \frac{2 \cdot 3^x - 3 \cdot 2^x}{7 \cdot 5^x + 5 \cdot 2^x}$$

**解**

例題 3. (精選範例 10-2-2)

Find the following limits.

$$(1) \lim_{x \rightarrow \infty} \frac{2 \cdot \left(\frac{1}{5}\right)^x - 3 \cdot \left(\frac{2}{3}\right)^x}{7 \cdot \left(\frac{1}{3}\right)^x + 2 \cdot \left(\frac{4}{5}\right)^x}$$

$$(2) \lim_{x \rightarrow \infty} \frac{2 \cdot \left(\frac{1}{5}\right)^x - 3 \cdot \left(\frac{2}{3}\right)^x}{7 \cdot \left(\frac{2}{3}\right)^x + 2 \cdot \left(\frac{3}{5}\right)^x}$$

$$(3) \lim_{x \rightarrow \infty} \frac{2 \cdot \left(\frac{1}{5}\right)^x - 3 \cdot \left(\frac{1}{3}\right)^x}{7 \cdot \left(\frac{2}{3}\right)^x + 2 \cdot \left(\frac{1}{5}\right)^x}$$

**解**

張  
旭  
微  
積  
分