

8.3

(13) $\ln x, \log \sqrt{x}$

$$\lim_{x \rightarrow \infty} \frac{\ln x}{\log \sqrt{x}}$$

$$\lim_{x \rightarrow \infty} \frac{\frac{1}{x}}{\frac{1}{\sqrt{x} \ln 10}} \left[\frac{1}{2x^{-\frac{1}{2}}} \right]$$

$$\lim_{x \rightarrow \infty} \frac{\sqrt{x} \cdot 2 \ln 10 \sqrt{x}}{x} = \lim_{x \rightarrow \infty} \frac{x \cdot 2 \ln 10}{x} = 2 \ln 10 = \ln 100$$
