用三次羅比塔法則

1. $\lim_{x \to 0} \frac{\tan x - \sin x}{x^3}$ $(\frac{0}{0})$

   $= \lim_{x \to 0} \frac{\sec^2 x - \cos x}{3x^2}$ $(\frac{0}{0})$

   $= \lim_{x \to 0} \frac{2 \sec x \sec x \tan x + \sin x}{6x}$

   $= \lim_{x \to 0} \frac{2 \sec^2 x \tan x + \sin x}{6x}$ $(\frac{0}{0})$

   $= \lim_{x \to 0} \frac{2 \sec^4 x + 4 \sec^2 x \tan^2 x + \cos x}{6}$

   $= \frac{1}{2}$