$$1. \quad \lim_{x \to 1} \frac{\ln|x|}{x - 1} =$$

$$2. \qquad \lim_{x \to \infty} \frac{1 + e^x}{e^x - 1} =$$

3.
$$\lim_{x \to \pi/2} \left(\frac{\pi}{2} - x \right) \sec(x) =$$

$$4. \quad \lim_{x \to 0} \left(\frac{1}{x} - \frac{1}{e^x - 1} \right) =$$

1.
$$\lim_{x \to \pi} \frac{\cos(x) + 1}{(x - \pi)^2} =$$

2.
$$\lim_{x \to 0} \frac{4 + 2\ln|x|}{5 - 3\ln|x|} =$$

$$3. \quad \lim_{x \to \infty} x e^{-x} =$$

4.
$$\lim_{x \to \infty} \left(\ln(x) - \ln(x+1) \right) =$$

1.
$$\lim_{x \to 1} \frac{\ln |x|}{4x - x^2 - 3} =$$

2.
$$\lim_{x \to \pi/2} \frac{1 + \tan(x)}{1 - 3\tan(x)} =$$

$$3. \quad \lim_{x \to \infty} x \sin\left(\frac{1}{4x}\right) =$$

$$4. \quad \lim_{x \to \infty} \Big(\ln(x) - \ln(x+1) \Big) =$$

1.
$$\lim_{x \to 1} \frac{e^x - e}{x^2 - 1} =$$

$$2. \quad \lim_{x \to \infty} \frac{\ln|x|}{\sqrt{x}} =$$

$$3. \quad \lim_{x \to 0} x \csc(x) =$$

4.
$$\lim_{x \to \infty} \left(2 \ln(x) - \ln(x^2 + 1) \right) =$$