SAT PREP

Assignment : AP CALCULUS BC (L' hospital Rule)

Evaluate Limit (If required use L' hospital Rule)

1) $\lim\limits_{x \to 0} \dfrac{\tan(5x)}{4x}$

2) $\lim\limits_{x \to \infty} \dfrac{x}{e^x}$

3) $\lim\limits_{x \to 0} \dfrac{x^2}{e^x - 1 - x}$

4) $\lim\limits_{x \to \infty} \dfrac{\ln(x+4)^4}{\ln x^5}$

5) $\lim\limits_{x \to \infty} \dfrac{x^2}{e^{2x}}$

6) $\lim\limits_{x \to 0} \dfrac{1 - \cos(5x)}{\cos(3x) - 1}$

7) $\lim\limits_{x \to 0} \dfrac{3x^2}{e^x - 1 - x}$

8) $\lim\limits_{x \to \infty} \dfrac{\ln(x+2)^5}{\ln x^2}$

Evaluate each limit using L'Hôpital's Rule.

9) $\lim\limits_{x \to 0} \dfrac{e^x - 1}{\sin(4x)}$

10) $\lim\limits_{x \to 1} \dfrac{\ln x}{x - 1}$

Answer

1) $\dfrac{5}{4}$

2) 0

3) 2

4) $\dfrac{4}{5}$

5) 0

6) $-\dfrac{25}{9}$

7) 6

8) $\dfrac{5}{2}$

9) $\dfrac{1}{4}$

10) 1