Answer on Question #41151 – Math – Integral Calculus

Evaluate the limit :
lim x tends to infinite {(sin(1/x))/(e(1/x)-1)} .

Solution:

$$\lim_{x\to\infty}\frac{\sin\frac{1}{x}}{e^{\frac{1}{x}}-1}=\left[Let\ t=\frac{1}{x}\right]=\lim_{t\to 0}\frac{\sin t}{e^{t}-1}=[sint\sim t, t\to 0;\ e^{t}-1\sim t, t\to 0]=\lim_{t\to 0}\frac{t}{t}=1.$$

Answer: 1.