

# LIMITS YOU SHOULD KNOW

$\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$  ... and understand how to use this to answer questions like  $\lim_{x \rightarrow 0} \frac{\sin 5x}{4x}$ .

$$\lim_{x \rightarrow \infty} \frac{\sin x}{x} = 0$$

$$\lim_{x \rightarrow 0} \frac{\cos x - 1}{x} = 0$$

$$\lim_{h \rightarrow 0} \frac{f(a+h) - f(a)}{h} = \text{slope of the curve at } x = a$$

$$\lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^x = e$$

... ADD others as we come across them ...