KNOW THE FOLLOWING THREE THEOREMS:

A. $\lim_{x\to 0}\frac{\sin\square}{\square}=1$	B. $\lim_{x\to 0}\frac{\square}{\sin\square}=1$	C. $\lim_{x\to 0}\frac{1-\cos\square}{\square}=0$

Examples:

1. $\lim_{x\to 0}\frac{\sin 3x}{x} \Rightarrow \lim_{x\to 0}\frac{\sin 3x}{x}\bullet\left[\frac{3}{3}\right] \Rightarrow \lim_{x\to 0}3\left[\frac{\sin 3x}{3x}\right]=\boxed{\boxed{3}}$

2. $\lim_{x\to 0}\frac{1-\cos 7x}{x} \Rightarrow \lim_{x\to 0}\frac{1-\cos 7x}{x}\bullet\left[\frac{7}{7}\right] \Rightarrow \lim_{x\to 0}7\left[\frac{1-\cos 7x}{7x}\right]=\boxed{\boxed{0}}$

3. $\lim_{x\to 0}\frac{\tan 2x}{x} \Rightarrow \lim_{x\to 0}\frac{\frac{\sin 2x}{\cos 2x}}{x} \Rightarrow \lim_{x\to 0}\frac{\sin 2x}{x\cos 2x} \Rightarrow \lim_{x\to 0}\frac{\sin 2x}{x\cos 2x}\bullet\left[\frac{2}{2}\right] \Rightarrow$

$\lim_{x\to 0}\frac{2}{\cos 2x}\left[\frac{\sin 2x}{2x}\right] \Rightarrow \lim_{x\to 0}\frac{2}{\cos 2x} \Rightarrow \lim_{x\to 0}\frac{2}{\cos 2(0)}=\boxed{\boxed{2}}$

Problems:

1. $\lim_{x\to 0}\frac{\sin\frac{1}{2}x}{x}$	2. $\lim_{x\to 0} x\csc x$	3. $\lim_{x\to 0}\frac{\sin 2x}{\sin x}$	4. $\lim_{x\to 0}\frac{\sin ax}{x}, a\neq 0$
5. $\lim_{x\to 0}\frac{\tan x}{x}$	6. $\lim_{x\to 0}\frac{\sin 3x}{\sin 2x}$	7. $\lim_{x\to 0}\frac{\sin 3x}{x}$	8. $\lim_{x\to 0}\frac{\sin x}{2x}$
9. $\lim_{x\to 0}\frac{3\sin x}{x}$	10. $\lim_{x\to 0}\frac{\sin 3x}{5x}$	11. $\lim_{x\to 0}\frac{\sin 4x}{2x}$	12. $\lim_{x\to 0}\frac{3x}{\sin x}$
13. $\lim_{x\to 0}\frac{\sin^2 x}{x}$	14. $\lim_{x\to 0}\frac{\sin ax}{\sin bx}$	15. $\lim_{x\to 0}\frac{\sin^4 2x}{4x^4}$	16. $\lim_{x\to 0}\frac{\sin 5x}{5x}$
17. $\lim_{x\to 0}\frac{1-\cos(2x)}{2x}$	18. $\lim_{x\to 0}\frac{x+2}{\cos x}$	19. $\lim_{x\to\frac{\pi}{4}}(\tan x)$	20. $\lim_{x\to 0}\frac{1-\cos x}{\sin^2 x}$