Limits at Infinity and of Trig Functions

1. $\lim_{x \to 0} \frac{3\sin x}{x}$

2. $\lim_{x \to 0} \frac{\cos x - 1}{\tan x}$

3. $\lim_{x \to 0} \frac{\sin(5x)}{\sin(2x)}$

4. $\lim_{x \to \infty} \frac{-7x}{\sqrt{4x^2+3}}$

5. $\lim_{x \to \infty} \sqrt{x^2+x+2} - x$

6. $\lim_{x \to 0} \frac{\sin 4x}{3x}$

7. $\lim_{x \to 0} \frac{x + \cos x}{\sin x}$

8. $\lim_{x \to 0} \frac{1 - \cos x}{x^2}$

9. $\lim_{x \to 0} \frac{7x\cos x + 3\sin x}{3x^2 + \tan x}$

10. $\lim_{x \to 0} \frac{5x + 7\sin x}{7x + 5\sin x}$

11. $\lim_{x \to 0} \frac{1 - \cos x}{x^2}$

12. $\lim_{x \to 0} \frac{2\sin x - \sin 2x}{x^3}$

13. $\lim_{x \to 0} \frac{\sin(-2x^2)}{x^2}$

14. $\lim_{x \to \frac{\pi}{2}} \frac{\tan 4\left(x - \frac{\pi}{2}\right)}{2\left(x - \frac{\pi}{2}\right)}$

15. $\lim_{x \to 1} \frac{\sin^2(x-1)}{x-1}$

16. $\lim_{x \to 0} \frac{3 + \tan x}{x}$