

Limits.

1. Find:

a) $\lim_{x \rightarrow \infty} \frac{(x+1)^2}{x^2+3}$;

b) $\lim_{x \rightarrow 2} \frac{x^2-4}{x^2-3x+2}$;

c) $\lim_{x \rightarrow 1} \frac{x^2-3x+2}{x^2-4x+3}$;

d) $\lim_{x \rightarrow 1} \frac{\sqrt{x}-1}{x-1}$;

e) $\lim_{x \rightarrow \infty} (\sqrt{x^2 - 5x + 6} - x)$;

f) $\lim_{x \rightarrow 0} \frac{\sin 5x}{4x}$;

g) $\lim_{x \rightarrow 0} \frac{1-\cos x}{x^2}$.

h) $\lim_{x \rightarrow 0} \left(\frac{\sin 2x}{x} \right)^{1+x}$.

i) $\lim_{x \rightarrow \infty} \left(1 + \frac{2}{x} \right)^x$.