

Calculus 12  
2-4 Questions

1. Find the following limits, if they exist.

a)  $\lim_{x \rightarrow -3} \frac{1}{(x - 3)^2}$

b)  $\lim_{x \rightarrow -8} \frac{x^2 + 16x + 64}{x + 8}$

c)  $\lim_{x \rightarrow 1} \frac{x^4 - 1}{x - 1}$

d)  $\lim_{x \rightarrow -1} \frac{x - 1}{x^2 - 1}$

e)  $\lim_{x \rightarrow 1} \frac{x^2 + x - 2}{x^2 - 2x + 1}$

f)  $\lim_{x \rightarrow -2} \frac{x^2 - x - 2}{x^2 + 3x + 2}$

g)  $\lim_{x \rightarrow 3} \frac{x^{-2} - 3^{-2}}{x - 3}$

h)  $\lim_{x \rightarrow 4} \frac{\frac{1}{\sqrt{x}} - \frac{1}{2}}{x - 4}$

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

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