

Finding Limits Algebraically (2.2, 2.5)

Using Limit Properties to Find the Limit: Use properties of limits to find the indicated limit. It may be necessary to rewrite an expression before limit properties can be applied.

1) $\lim_{x \rightarrow -2} 5x^2$

2) $\lim_{x \rightarrow 2} \frac{3x}{x-4}$

3) $\lim_{x \rightarrow -1} \sqrt{5x^2 + 4}$

4) $\lim_{x \rightarrow \frac{\pi}{6}} \frac{\cos x}{1 + \sin x}$

Strategies for Finding Limits When the Limit of the Denominator is Zero: Use properties of limits to find the indicated limit. It may be necessary to rewrite an expression before limit properties can be applied.

5) $\lim_{x \rightarrow 3} \frac{x^2 - x - 6}{x^2 - 9}$

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

7) $\lim_{x \rightarrow 2} \frac{\frac{1}{x+4} - \frac{1}{4}}{x}$

8) $\lim_{x \rightarrow 9} \frac{\sqrt{x} - 3}{x - 9}$

Strategies for Finding Limits When the Limit of the Denominator is Zero: Use a graph or table to find the following limit.

9) $\lim_{x \rightarrow 2} \frac{3^x - 5}{3^{x-2}}$

