

1. Use the  $\varepsilon, \delta$  definition of the limit to prove  $\lim_{x \rightarrow 5} (2x - 3) = 7$
2. Prove that  $\lim_{x \rightarrow 3} (x^2 + 2x - 5) = 10$
3. In answering the following question, round all values to the nearest 0.01.  
Given  $f(x) = \frac{1}{x-2}$ ,  $\lim_{x \rightarrow 3} f(x) = 1$ , and  $\varepsilon = 0.1$ , find the largest value of  $\delta$  such that  
If  $0 < |x - 3| < \delta$ , then  $|f(x) - 1| < \varepsilon$ .
4. Use the  $\varepsilon, \delta$  definition of the limit to prove  $\lim_{x \rightarrow 5} (3x - 4) = 11$
5. Prove that  $\lim_{x \rightarrow 2} (x^2 - 3x + 3) = 1$
6. Prove that  $\lim_{x \rightarrow 2} (2x^2 - x - 2) = 4$

More:

1.  $\lim_{x \rightarrow 2} (x^2 - 3x + 5) = 3$
2.  $\lim_{x \rightarrow 1} (x^2 + 5x + 4) = 10$
3.  $\lim_{x \rightarrow -1} (3x^2 - x + 4) = 8$