

Given the value for ε , find the largest possible δ .

1. $f(x) = -3x + 7$; $a = 2$; $L = 1$; $\varepsilon = 0.1$

2. $f(x) = x + 2$; $a = -3$; $L = -1$; $\varepsilon = 1/4$

Use the ε - δ definition of limit to prove the following theorems.

3. $\lim_{x \rightarrow 2} (5x - 1) = 9$

4. $\lim_{x \rightarrow 4} (-2 - 3x) = -14$

5. $\lim_{x \rightarrow 0} x = 0$

6. $\lim_{x \rightarrow -1} \left(\frac{2}{3}x - 1 \right) = -\frac{5}{3}$