Prove the following using a $\delta - \varepsilon$ proof.

1. $\lim_{x \to 2} (4x - 3) = 5$

2. $\lim_{x \to 4} (-6x + 17) = -7$

3. $\lim_{x \to (-5)} (2x + 13) = 3$

4. $\lim_{x \to 0} (6x - 4) = -4$

5. $\lim_{x \to (-7)} (x + 3) = -4$

6. $\lim_{x \to 4} (-4x + 4) = -12$

7. $\lim_{x \to a} (mx + b) = (ma + b)$

To check yourself, here is what you should obtain for the choice of δ:

1. $\delta = \dfrac{\varepsilon}{|4|}$

2. $\delta = \dfrac{\varepsilon}{|-6|}$

3. $\delta = \dfrac{\varepsilon}{|2|}$

4. $\delta = \dfrac{\varepsilon}{|6|}$

5. $\delta = \varepsilon$

6. $\delta = \dfrac{\varepsilon}{|-4|}$

7. $\delta = \dfrac{\varepsilon}{|m|}$