Brief answer to selected problems in HW01

1. Section 2.3: Problem 35.

   Take $\delta = \min\left(3 + \frac{3.5^2 - 1}{-5}, -(3 + \frac{4.5^2 - 1}{-5})\right)$. It will work for $\varepsilon = 0.5$.

2. Section 2.3: Problem 49.

   Taking $\delta = \varepsilon$ will do.

3. Section 2.3: Problem 53.

   The function $f(x) = x^2$, if $x \neq 0$ with $f(0) = -1$ satisfies the statement with $x_0 = 0$ and $L = -1$ but the limit is not L.

4. Section 2.3: Problem 57(b).

   Let $\varepsilon_0 = 1/2$. Then for any $\delta > 0$, take $x_0 = 1 + \delta/2$ will do the job.