1. (2 pts.) Let $E$ be a non-empty subset of $\mathbb{R}$, and suppose that $f: E \rightarrow \mathbb{R}$ is a function. What does it mean to say $f$ is continuous at a point $x \in E$? [Definition!! Use complete sentences.]

2. (2 pts.) Suppose that $\langle f_n \rangle$ is a sequence of real-valued functions defined on a non-empty set $E$ and $f$ is a real-valued function defined on $E$. What does it mean to say the sequence $\langle f_n \rangle$ converges pointwise to $f$ on $E$? [Definition!! Use complete sentences.]

3. (2 pts.) Suppose that $\langle f_n \rangle$ is a sequence of real-valued functions defined on a non-empty set $E$ and $f$ is a real-valued function defined on $E$. What does it mean to say the sequence $\langle f_n \rangle$ converges uniformly to $f$ on $E$? [Definition!! Use complete sentences.]

4. (2 pts.) Suppose that $\langle f_n \rangle$ is the sequence of real-valued functions defined on $[0,1]$ by $f_n(x) = x^n$ for each $x \in [0,1]$, and $f$ is the real-valued function defined on $[0,1]$ by $f(x) = 0$ for $x \neq 1$ and $f(x) = 1$ for $x = 1$. It turns out that the sequence $\langle f_n \rangle$ converges to $f$. Is the convergence uniform? Explain.

5. (2 pts.) Let $E$ be a non-empty subset of $\mathbb{R}$, and suppose that $f: E \rightarrow \mathbb{R}$ is a function. What does it mean to say $f$ is uniformly continuous on $E$? [Definition!! Use complete sentences.]