Homework #23.

• Read pp. 97 - 99 and pp. 111 - 115.

1. For each of the sets below, find an open cover of a set for which there is no finite subcover.

a) $\mathbb{R}$;

b) $\{n^2 \mid n \in \mathbb{N}\}$;

c) $\{\frac{1}{n} \mid n \in \mathbb{N}\}$;

d) $[0, 1)$.

2. Do # 3.3.9

3. For each limit below find the largest $\delta(\varepsilon) > 0$ that guarantees that
$$0 < |x - c| < \delta(\varepsilon) \implies |f(x) - L| < \varepsilon.$$

a) $\lim_{x \to 3} (5x + 7) = 22$;

b) $\lim_{x \to 2} x^2 = 4$

4. Negate definitions 4.2.1 and 4.2.1 B.