SON TESLİM TARİHİ: Çarşamba 12 Ekim 2016 saat 10:00'e kadar.

Egzersiz 1 (Metric spaces).

(a) [24p] Show the *inverse triangle inequality*

$$|d(x,y) - d(z,y)| \leq d(x,z).$$

(b) [24p] Show the *quadrangle inequality*,

$$|d(x,y) - d(x',y')| \leq d(x,x') + d(y,y').$$

(c) [24p] Let $U \subseteq V$ be subsets of a metric space X. Show that if U is dense in V and V is dense in X, then U is dense in X.

Egzersiz 2 (Topological spaces).

(a) [14p] Show that $X \setminus \overline{A} = (X \setminus A)^o$.

(b) [14p] Show that $X \setminus A^o = \overline{(X \setminus A)}$.