Esercizio 1. ($\leq$ 2 righe.) Let T be a consistent theory in a countable language L. Find a (super easy) counterexample to the following. If T is ω-categorical then T is complete.

Esercizio 2. ($\leq$ 4 righe.) Let L be the language of strict orders expanded with the constants $\{c_i : i \in \omega\}$. Let T be the theory that extends T_{dlo} with the axioms $c_i < c_{i+1}$ for all i. Prove that T is complete.

Esercizio 3. ($\leq$ 2 righe.) Let L be the language of strict orders expanded with the constants $\{c_i : i \in \omega\}$. Let T be the theory that extends T_{dlo} with the axioms $c_i < c_{i+1}$ for all i. Find a countable model that is not ultrahomogeneous (i.e. the analogue of Theorem 6.15 does not hold for T).

Esercizio 4. ($\leq$ 4 righe.) Let N be free union of two random graphs N_1 and N_2. That is, $N = N_1 \sqcup N_2$ and $r^N = r^{N_1} \sqcup r^{N_2}$, where $\sqcup$ denotes the disjoint union. Prove that N is not a random graph. Show that N_1 is not definable without parameters. Write a first order formula $\psi(x, y)$ true if x and y belong to the same connected component of N.

Esercizio 5. ($\leq$ 4 righe.) Let N be a random graph prove that if $M \subseteq N$ then M or $N \smallsetminus M$ is also a random graph.

Esercizio 6. ($\leq$ 4 righe.) Let $A \subseteq N \models T_{\text{rg}}$. Prove that $\varphi(N)$ is a random graph whenever $\varphi(x) \in L(A)$ is consistent and such that $\varphi(N)$ is disjoint of A.