Theorem 1. *Let $\mathcal{C}$ be an abelian category. Then $\mathrm{K}(\mathcal{C})$ (also $\mathrm{K}^+, \mathrm{K}^-, \mathrm{K}^b$) with standard translation functor and distinguished triangles is triangulated.*

Remark 2. $\mathrm{C}(U)$ fits as Z in TR1.

Definition 3 (cohomological functor)**.** *Assume $\mathcal{C}$ is triangulated, $\mathcal{A}$ is abelian. Let $F : \mathcal{C} \to \mathcal{A}$ be an additive functor. We call it* cohomological *if for any distinguished triangle $X \xrightarrow{u} Y \xrightarrow{v} Z \xrightarrow{w} T(X)$ we have an exact sequence $\ldots \to F(T^i(X)) \to F(T^i(Y)) \to F(T^i(Z)) \to F(T^{i+1})(X)) \to \ldots$.*

Definition 4. *Let $\mathcal{C}$ be a triangulated category, S a localizing class of morphisms in $\mathcal{C}$. We say that S is* compatible *with triangulation if*

- *$s \in S \iff T(s) \in S$,*
- *in TR3, $f, g \in S \implies h \in S$ for any h.*

Theorem 5. *Let $\mathcal{C}$ and S be as above. On $\mathcal{C}[S^{-1}]$ we can define*

- *$T_S : \mathcal{C}[S^{-1}] \to \mathcal{C}[S^{-1}]$, $T_S = T$ on objects and morphisms, i.e. $T(X \xleftarrow{s} Z \xrightarrow{f} Y) = T(X) \xleftarrow{T(s)} T(Z) \xrightarrow{T(f)} T(Y)$.*
- *$X \xrightarrow{u} Y \xrightarrow{v} Z \xrightarrow{w} T(X)$ is distinguished in $\mathcal{C}[S^{-1}]$ if it is isomorphic to a distinguished triangle coming from $\mathcal{C}$.*

Then $\mathcal{C}[S^{-1}]$ with the structure defined above is triangulated.

Corollary 6. *Derived category of an abelian category inherits the triangulated structure from the homotopy category of complexes.*