A Banach space X such that all its closed subspaces are complemented.

Any Hilbert space.

Note that Lindenstrauss and Tzafriri, showed that each Banach space for which every closed subspace is complemented is isomorphic to a Hilbert space (cf. [J. Lindenstrauss and L. Tzafiriri, On complemented subspaces problem. Israel J. Math., 2, 1984, 375-378].)