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Assignment 12 Quiz 9 Pt 2

**Question 3**

All basketball players in a team form a set A. T is the relation deﬁned on A as follows:  For all x, y ∈ A, x T y ⇔ x is not the same height as y.

Show whether T is reflexive, symmetric, or transitive.

Show whether T is an equivalence relation

**T is not reflexive:** Two players can’t have the same height because if player x has the same height as player y, the there is no relation.

**T is symmetric:** If player x has a different height from player y, then x T y and y T x because both players will still have a different height.

**T is transitive:** If player x has a different height than player y, and player y has a different height than player z, player x will have a different height than player x because no two players can have the same height or there will be no relation.

**T is not an equivalence relation:** T is symmetric and transitive **but,** it is not reflexive.