## Exercise: Conditional independence properties of GMs

(Source: Koller.) Are the following properties true? Prove or disprove. Note that we are not restricting attention to distributions that can be represented by a graphical model.

1. True or false? $(X \perp W | Z, Y) \wedge (X \perp Y | Z) \Rightarrow (X \perp Y, W | Z)$

2. True or false? $(X \perp Y | Z) \wedge (X \perp Y | W) \Rightarrow (X \perp Y | Z, W)$