

Jigsaw 3D

Home Section 3.7. Properties of J-coupling

1. The ^1H - ^1H J-coupling in a compound $\text{CHX}_2\text{-CHY}_2$ is 3.96 Hz. If $J_1 = 1.9\text{Hz}$ and $J_2 = 11.7\text{Hz}$, determine the population fractions of the two rotamers. J_1 and J_2 are the ^1H - ^1H coupling constants for the gauche and trans conformations, respectively.

2. Imagine that you are given the molecule below. When would you expect the maximum three-bond J-coupling between the protons highlighted? Sketch and explain the dependence of the J-coupling as a function of its dihedral angles that you would expect.

