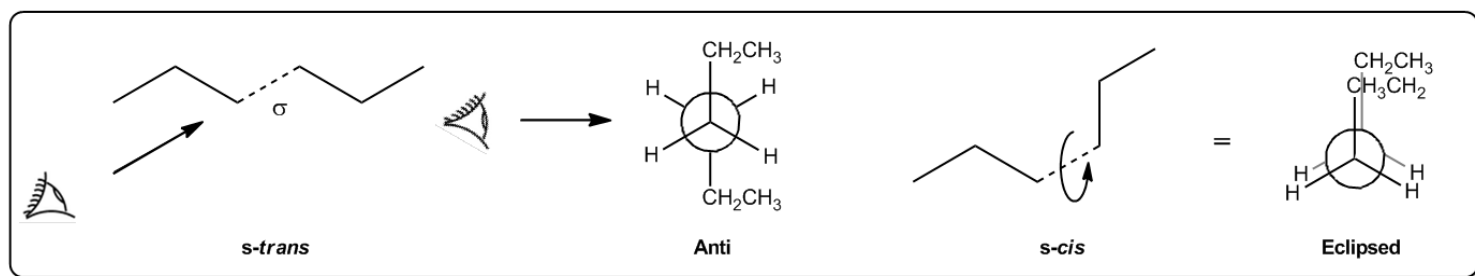


## CONCEPT: NEWMAN PROJECTIONS

Newman projections are drawings used to help us visualize all the conformers that can be made by rotating a \_\_\_ bond

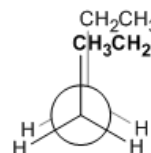


□ The dihedral angle \_\_\_\_\_ is used to describe rotation around a single bond

- Calculated by taking the angle of the largest group on the front and back relative to each other

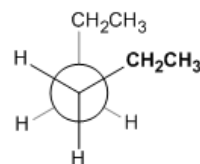
$\theta = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ : The two largest groups *overlap* each other

- \_\_\_\_\_ energy



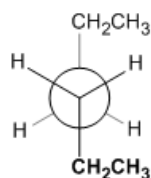
$\theta = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ : The two largest groups are *adjacent* to each other

- \_\_\_\_\_ energy



$\theta = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ : The two largest groups are *opposite* to each other

- \_\_\_\_\_ energy



**EXAMPLE:** Plot the following dihedral angle values with their respective energy to determine the energy diagram for the rotation of hexane along the C3 – C4 bond.

