

$$\begin{array}{c|c} H & CI \\ \hline C(CH_3)_3 & 2 \\ \hline & 5 & CH_3 \\ \hline & H \end{array}$$

This is the incorrect structure, t-butyl can NOT be on the axial position.

When looking to do E2 on this reaction, you can not do E2 to this structure because the structure does not exist. It is just too unstable to have t-butyl on the axial position!

$$(H_3C)_3C$$
 H
 CI
 CH_3
 CH_3
 H
 CH_3

This is the structure you would look at to see if you can do E2 because t-butyl is on the equatorial position. Now that you have ensured it is on the equatorial position, you can see if you have a leaving group, (CI), and an (H) on trans axial positions.

In this case, you do have a Hydrogen and CI on axial positions, therefore E2 will occur!

Final note: If there is no big bulky group dictating the confirmation of the molecule, then you do NOT have to draw the chair confirmations.

$$(H_3C)_3C$$
 $\begin{array}{c} H \\ \hline \\ 5 \\ H \end{array}$
 $\begin{array}{c} CH_3 \\ \hline \\ CH_3 \end{array}$