Allylic radical substitution of nonsymmetrical alkenes we observe:

\[
\begin{align*}
\text{minor} & \quad + \quad \text{major} & \quad + \quad \text{trace} & \quad + \quad \text{trace} \\
\end{align*}
\]
Allylic radical substitution of nonsymmetrical alkenes

we observe:

![Chemical structures](image)

After initiation, the first propagation step forms the thermodynamically more stable radical intermediate:

Yes:

![Chemical structures](image)

No:

![Chemical structures](image)
In the second propagation step, NBS can make a C–Br bond with any of the three one-electron carbons of the allylic radical intermediate that has formed. Consider each possibility:

due to *steric hindrance in the transition state*: highest $E_{act}$  
product's *thermodynamic stability*: middle
Therefore, the major product of allylic radical bromination is the product that

- has the least amount of steric hindrance in the transition step of the second propagation step
- is the thermodynamically most stable (most substituted alkene) product
- comes from the most stable allylic radical formed in the first propagation step