

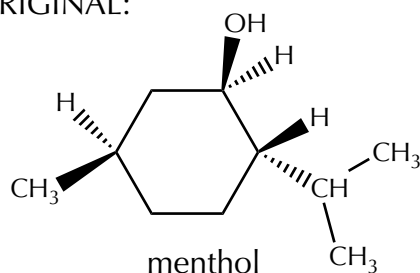
## Problem of the Day 22

Section 6.2

Question 6.15

Create a diastereomer of menthol and draw its two chair conformations. How confident are you about your evaluation of the relative stabilities of the two forms? Explain.

ORIGINAL:



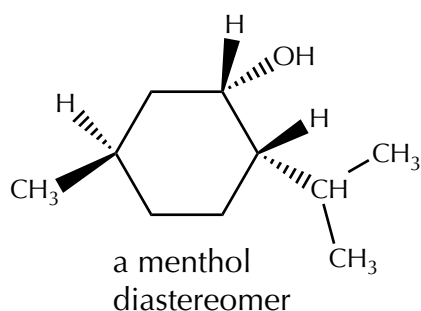
A-values

1.70 -CH<sub>3</sub>

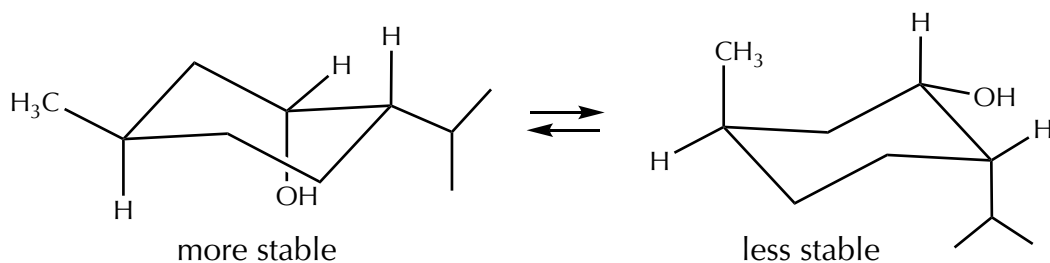
0.87 -OH

2.15 -CH(CH<sub>3</sub>)<sub>2</sub>

POD:



note: there are others, and this example is a model - you should compare and discuss your answer with others



$$\begin{aligned}\Delta G^\circ &= +(\text{CH}_3) - (\text{OH}) + (\text{CH}(\text{CH}_3)_2) \\ &= +1.70 - 0.87 + 2.15 \\ &= +2.98\end{aligned}$$

degree of confidence: high

(a) the value is convincingly high

(b) the value matched intuition

(c) the only other interaction (gauche OH/isopropyl) is present in both, so that's a wash

(d) no other interactions are introduced