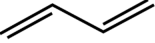

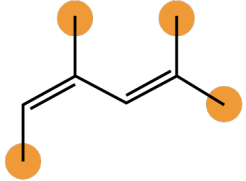
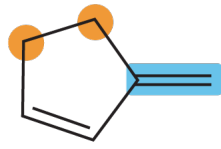
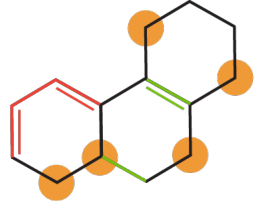


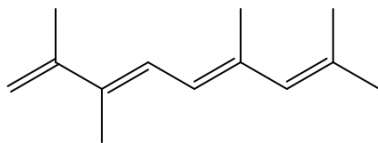
CONCEPT: WOODWARD-FIESER RULES

- A set of rules that help to give an _____ for λ_{\max} of conjugated systems.

Woodward-Fieser Rules

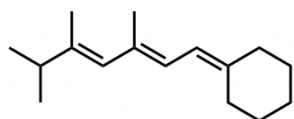
<p>1 Conjugated Diene</p> <p></p> <p>Base Value: _____</p> <p><input type="checkbox"/> Each additional conjugated double bond: _____</p> <p></p> <p>Base Value: _____</p> <p>Total: _____</p>	<p>2 Alkyl (auxochromic) Group</p> <p>_____ carbons attached to conjugated vinylic carbon.</p> <p><input type="checkbox"/> Each auxochromic group: _____</p> <p></p> <p>Base Value: _____</p> <p>Total: _____</p>
<p>3 Exocyclic Double Bond</p> <p>A double bond with _____ vinylic carbon as part of the ring and _____ vinylic carbon extending outside the ring.</p> <p><input type="checkbox"/> Each exocyclic double bond: _____</p> <p></p> <p>Base Value: _____</p> <p>Total: _____</p>	<p>4 Homoannular Diene</p> <p>Conjugated diene in the same ring in an _____ conformation.</p> <p><input type="checkbox"/> Each homoannular diene: _____</p> <p></p> <p>Base Value: _____</p> <p>Total: _____</p>

EXAMPLE: Using the Woodward-Fieser Rules, determine the λ_{\max} for the following compound.

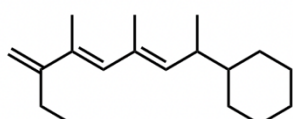


CONCEPT: WOODWARD-FIESER RULES

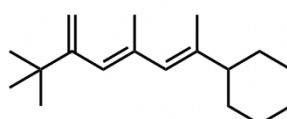
PRACTICE: Which of the following compounds displays the most alkyl (auxochromic) groups?



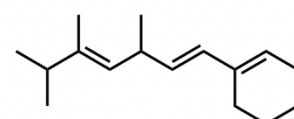
A



B

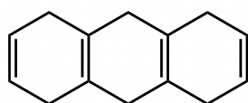


C

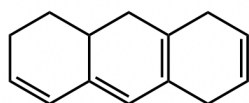


D

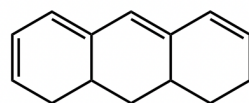
PRACTICE: Which of the following compounds do you expect to show the largest λ_{max} ?



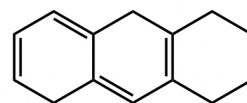
A



B

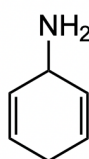


C

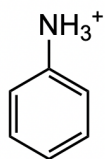


D

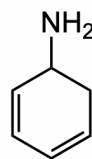
PRACTICE: Rank the following in order of increasing λ_{max} .



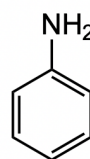
A



B



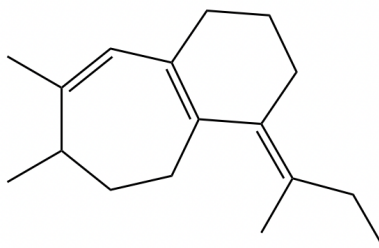
C



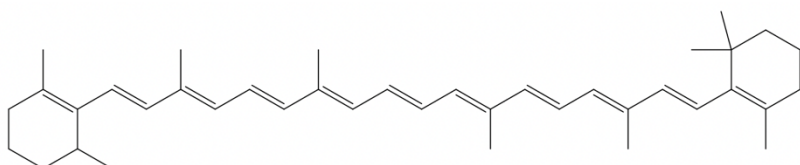
D

CONCEPT: WOODWARD-FIESER RULES

PRACTICE: Using the Woodward-Fieser Rules, determine the λ_{max} for the following compound.



PRACTICE: An image of the visible light spectrum is displayed below. Based on the calculated λ_{max} for the following compound, which colored region would it reside?



Visible Light Spectrum Values



Color	Wavelength (nm)
Red	750 – 620
Orange	620 – 590
Yellow	590 – 570
Green	570 – 495
Blue	495 – 450
Indigo	450 – 420
Violet	420 – 380