1. True or False?
   a. Enantiomers can be separated by fractional distillation
   b. Diastereomers have opposite specific rotation
   c. Meso molecules are chiral with an internal plane of symmetry
   d. A racemic mixture is achiral

2. Complete the missing pictures:

<table>
<thead>
<tr>
<th>Newman</th>
<th>Perspective (line structure)</th>
<th>Fischer</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Newman Perspective 1" /></td>
<td><img src="image2.png" alt="Perspective 1" /></td>
<td><img src="image3.png" alt="Fischer Perspective 1" /></td>
</tr>
<tr>
<td><img src="image4.png" alt="Newman Perspective 2" /></td>
<td><img src="image5.png" alt="Perspective 2" /></td>
<td><img src="image6.png" alt="Fischer Perspective 2" /></td>
</tr>
<tr>
<td><img src="image7.png" alt="Newman Perspective 3" /></td>
<td><img src="image8.png" alt="Perspective 3" /></td>
<td><img src="image9.png" alt="Fischer Perspective 3" /></td>
</tr>
</tbody>
</table>
3. Which of the following are meso?

![Chemical structures](images)

4. It has been observed that (R)-2-hexanol has a specific rotation of -60.0. Determine the specific rotation for (a) –(c):

a. (S)-2-hexanol

b. 50% (S)-2-hexanol and 50% (R)-2-hexanol

c. 70% (S)-2-hexanol and 30% (R)-2-hexanol

d. What is the composition of a mixture if the specific rotation is -48?