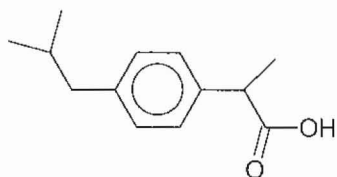


1. What units are  $R_f$  values expressed in? Circle one answer! (3 pts)

- a. mm/minute    b. cm    c. mm/mol    **d. they are dimensionless**    e. cm/g

2. Below is a formula for ibuprofen, for which different stereoisomers exist:



a. How many stereoisomers does this molecule have? (3 pts)

2

b. Would you expect to obtain different  $R_f$  values for these stereoisomers on your TLC plates? (2 pts)

a. yes

**b. no**

3. Circle all that are suitable for the separation of non-volatile samples (4 pts)

**a. TLC**

**b. Column chromatography**

c. gas chromatography

**d. HPLC**

4. Assume you chromatograph acetaminophen on two otherwise identical TLC plates, one 5 cm high and the other 10 cm high, using the same solvent. In each case, you let the solvent rise to within one cm of the top of the plate. Would the  $R_f$  values for acetaminophen on the two plates be different or the same? (3 pts)

**a. the same**

b. different