Exercise # 8

Predictions for Alkane Halogenation by Free Radical Substitution

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**Assuming that each of the pentanes below undergoes monochlorination:**

1. Predict the number of unique monochlorination products possible
2. Qualitatively predict the `major’ and `minor’ products
3. Calculate the expected % yield of all the unique monochlorination products assuming

**Site Relative yield/H for radical chlorination [see supplement 7 ]**

**1o 1**

**2o 3.7**

**3o 5.1**

**8.1 n-pentane**

1. number of unique monochlorination products possible \_\_\_\_\_\_
2. `major’ and `minor’ products (draw them)
3. Calculate the expected % yield of all the unique monochlorination products assuming relative yield values above.

**8.2 neopentane**

1. number of unique monochlorination products possible \_\_\_\_\_\_
2. `major’ and `minor’ products (draw them)

**8.3 isopentane**

1. number of unique monochlorination products possible \_\_\_\_\_\_
2. `major’ and `minor’ products (draw them)
3. Calculate the expected % yield of all the unique monochlorination products assuming relative yield values above.