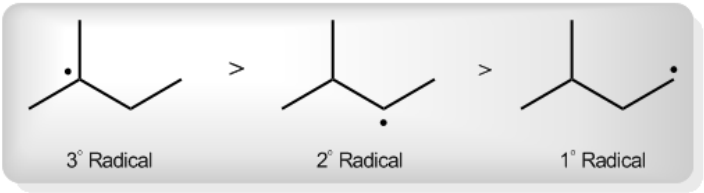
CONCEPT: CALCULATING RADICAL YIELDS

□ We need equations to make quantitative predictions about the exact ratios of these products formed.

Stability of Radical Intermediates



Relative Rate of Halogenation at 25° C

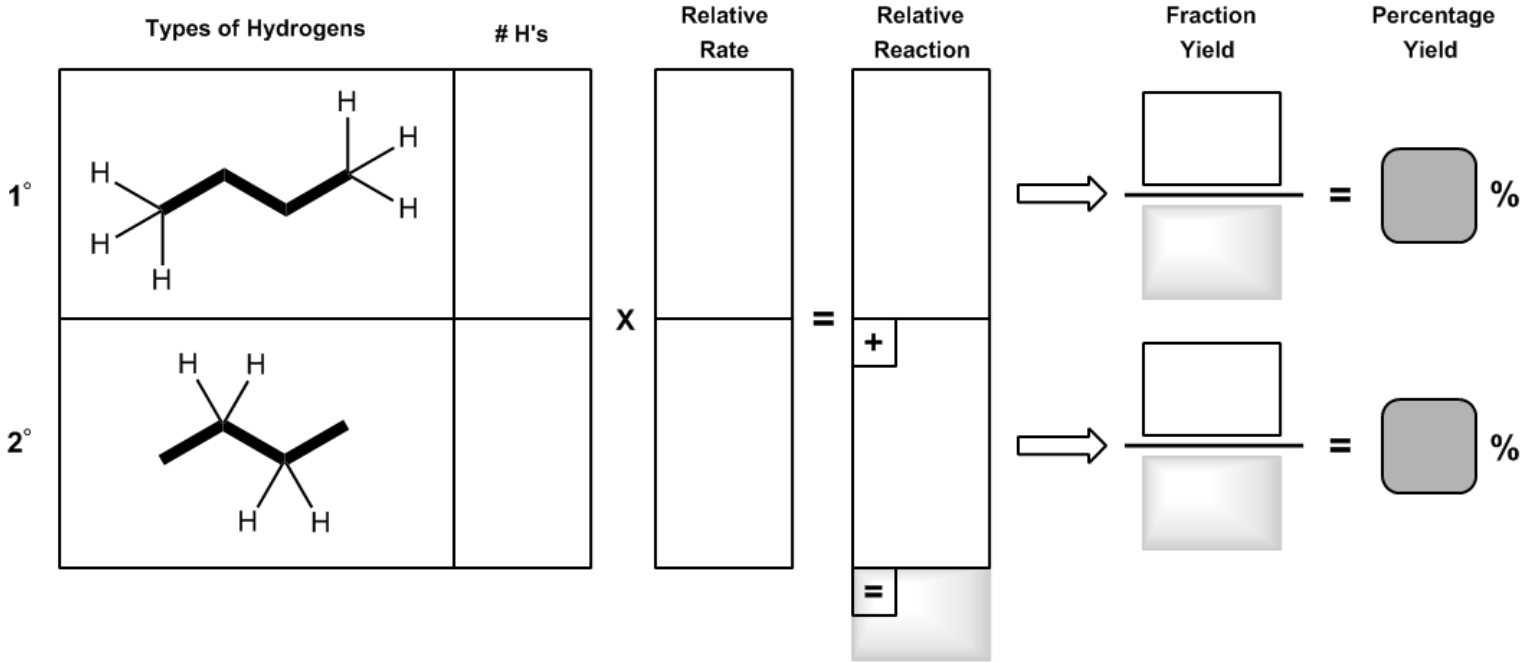
	1° -H	2° -H	3° -H
Cl_2 / *hv*	1	4	5
Br_2 / *hv*	1	80	1600

● Chlorination is non-selective, meaning that the difference between relative rates of halogenation is _____

● Bromination is highly selective, meaning that the difference between relative rates of halogenation is _____

● These ratios are ***only*** valid at room temperature. At higher temperature the ratios get _____

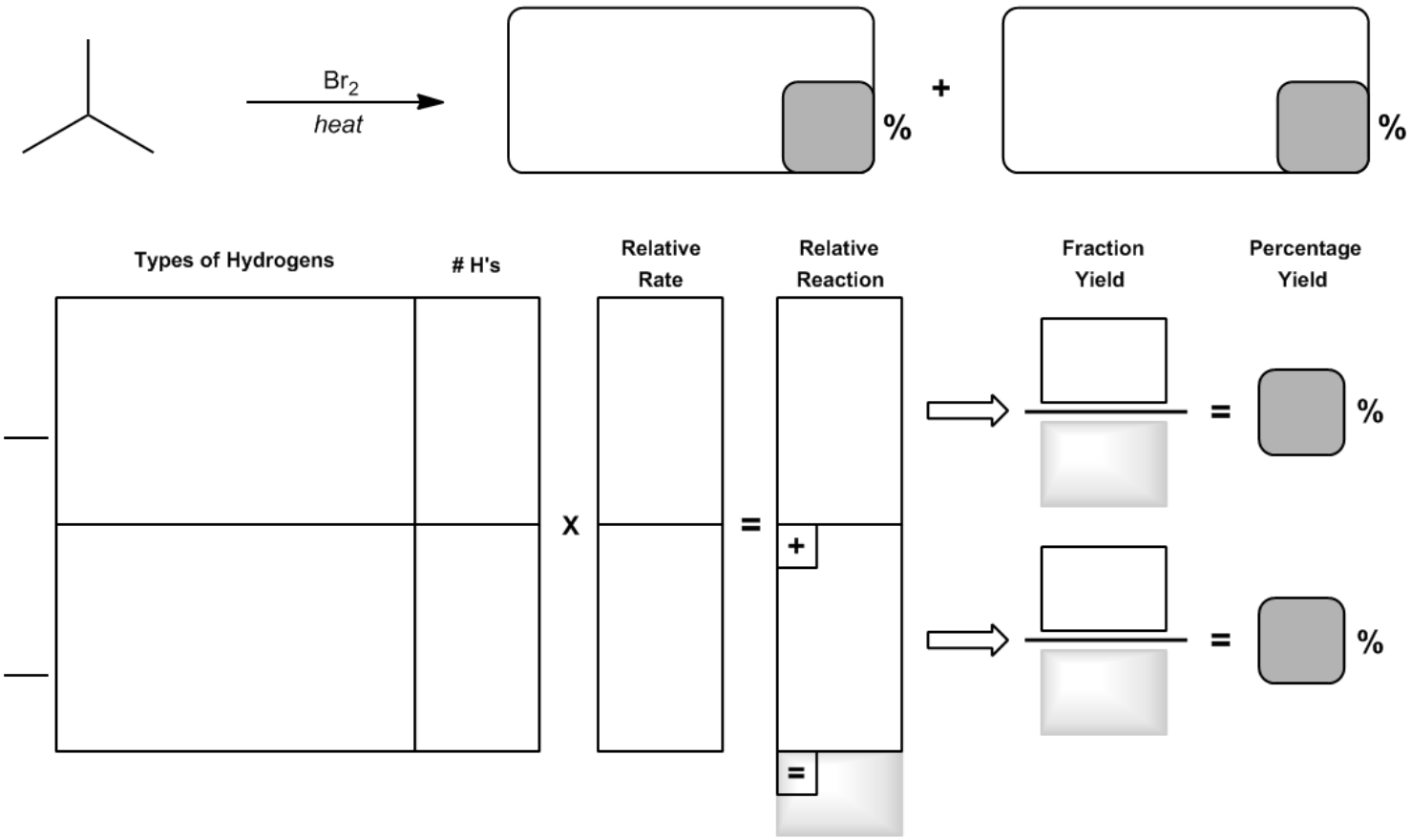
EXAMPLE: Draw all of the monochlorination products of butane. Calculate the percentage yields of each product.



Products: _____ % + _____ %

CONCEPT: CALCULATING RADICAL YIELDS

PRACTICE: Calculate the percentage yield of all monobromination products at room temperature.



PRACTICE: Calculate the percentage yield of all monobromination products.