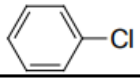
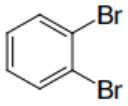
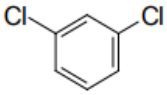
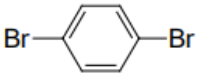
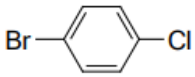
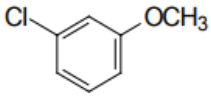
1) Solution

Structure	Number of ^{1}H environments	Number of ^{13}C environments
$CH_3-CO-CH_2CH_2CH_3$	4	5
$CH_3CH_2-CO-CH_2CH_3$	2	3
$CH_2=CHCH_2CH_3$	5	4
cis- $CH_3CH=CHCH_3$	2	2
trans- $CH_3CH=CHCH_3$	2	2
	1	1
	3	4
	2	3
	3	4
	1	2
	2	4
	5	7

2) Solution

δ_A = 150 Hz / 400 MHz = 0.375 ppm
δ_X = 300 Hz / 400 MHz = 0.750 ppm

3) Solution

δ_A = 3.36 ppm = 3.36 x 60 = 202 Hz from TMS

δ_X = 1.11 ppm = 1.11 x 60 = 67 Hz from TMS