ORGANIC CHEMISTRY I PROBLEMS
Based on Organic Chemistry (9th Edition) by L. G. Wade Jr

Note: if you have the 8th, 7th or 6th edition of Wade, or if you have a Klein textbook as used at NDSU, lists of problems are linked from the following website, or you can email me (jasperse@mnstate.edu) to get the list.) Contact me if that's your situation, or see the following link:

- http://web.mnstate.edu/jasperse/Chem350/Other-Textbooks.html

Note: for some links to buy variably new or perhaps older edition of the textbook and the associated solutions manuals, see: https://web.mnstate.edu/jasperse/Required-Text-and-Materials.pdf

Chapter Topic	Wade Chap	Wade 9 Problems In the Chapter	Wade 9 Problems Back of the Chapter
Intro, Structure and Bonding	**1**	2a-h, 3a-h, 4, 5a-c, 6(omit boron ones), 7a-e, 8a,b, g, 9a, d, 11, 12, 15b, 16, 17, 18, 19, 22, 24a,b, 25	29a-g (ionic or not), 31a-e, 32, 33, 35, 37 (ID lone-pairs, and #-of-attached-hydrogens), 41a,b,d,e,g, 42a,b,d, 43a,c, 44a,b,e, 58a,c,e 59a-f
Acids, Based, Functional Groups	**2**	5, 6b,c,d,e, 7, 13a,e, 24 (ignore the "cyclo" part), 25, 26(skip d,f), 27 (skip h),	31 (ignore the solubility-in-water prediction part), 32a-e, 33, 35a,b,e, 36(b,c,d only), 37(ignore HF), 38(ignore first two), 41a-c, 42a,c,f, 45a, 46a, 47a, 49, 55a-l, 56a-f, 57(ignore sulfide)
Alkanes	**3**	1a, 2a, 3, 4a-d,f 5, 6a,b, 7a,b, 9a, 12, 16a,d,e, 17, 18, 25-27, 29	34, 35, 36(omit c and d), 37 (omit b), 39 (omit e,g,h), 41, 42b, 44, 45a,b, 46, 48, 51
Chemical Reactions.	**4**	1a-c, 2, 4a, 9a, 11-13, 18, 19a-d, 24, 25, 28-32.	34-37, 40, 42-45, 47a,b,e
Stereo chemistry	**5**	2 (label as chiral or achiral. If chiral, also draw the enantiomer.), 3 (star chiral C's, identify each chiral molecule, and be able to draw the enantiomers.), 4, 5 (assign as chiral or achiral), 6 [skip f,g. For all others, give the (R)/(S) designations.], 14, 20a-e, 21 (skip f), 22, 23c	25, 26a,c,d,j-p , 27, 30d, f-h 31a, f-i, 36
Alkyl Halides: SN2, SN1, E2, E1 Reactions	**6**	1, 2c,e,f, 3.1,3, 6, 7 (the density of chloroform is 1.50), 8a, 10 S_N2 Reactions: 11-13, 14a,b,d,e, 15(skip b,g), 16, 18 (skip neopentyl bromide. And, substitution is more important than leaving group), 19a,b, 20(skip c,e,f), S_N1 Reactions: 22, 23, 24, 25, 27, 29 (very interesting. Probably not test fodder.)	30, 31a,c-e, 32a,b,e,f, 33*, 32("solvolysis" is substitution by solvent, and is always S_N1), 35, 37-42, 45
Alkenes	**7**	1 (for b, counting geometric isomers, I count 14 possible alkene isomers and 15 possible cyclic isomers! The answer book only shows a few of the possibilities.), 4, 5a,b,c, 6a,d,e, 7a,e, 8a,c,e, 13b-d (more stable only. Skip the part about how much difference in energy), 16, 17a, 20a,b, 24, 25, 28, 29, 31, 32a, 33(skip f), 35a,b, 37	40, 41, 42a-c, 43a,b,d, 44 (for part c: how many rings does it have?), 49a, 50, 52a-c, 53, 56, 57, 58, 61a,
Alkene Addition Reactions	**8**	1-4, 6, 8-11, 13-20, 21a-d, 22 (for b, book answer is poor. Should use a hindered base), 23, 24, 29, 30 (mech for ring-opening only), 32b,d, 33, 34b-f, 35 (d,l means racemic mix of chiral products), 36, 37	46 (skip f, i, k,o; good practice for "predict the product" reactions.), 47a-l, 49, 50 (good synthesis design practice), 51 (skip e,g,i), 56a, b, c,e,f, 61
Conjugated Systems	**15**	1, 2, 4, 5, 6, 7(skip c), 9, 10-11(NBS=Br_2/hv), 12, 14, 15 (skip d), 16 (ignore stereochem), 18	24, 25a-d,g-i, 27, 30, 31, 33a-f
Aromatics	**16**	3(skip cyclooctatetraene), 5, 7b-d, 8, 12, 15, 16 (pyrrole picture on top of page, Fig 16.12), 17 (purine picture in section 16-9c), 19, 24a, c,e,g	26a-f, 27a-c,e,f, 28, 32, 34 (hint: N lone pairs are strongly basic when sp^3 or sp^2 but weakly basic when p), 35, 36, 37 ("xylene" means dimethyl benzene), 43
Aromatic Reactions	**17**	2, 3(p-xylene is 1,4-dimethylbenzene), 5, 6, 7, 8, 11, 12, 13, 14b(i-iv), 15a,c, 18, 19a, 20a-c, 43, 44, 46, 48	50a,b,d,f,h,j,l, 52a,b,e,f,g, 53b-f,h,i,j,l, 54, 57, 57, 64