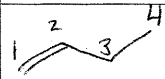
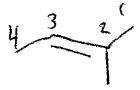
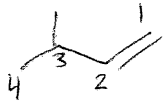
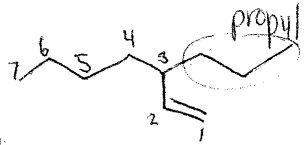
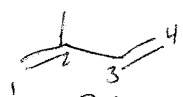
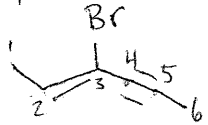
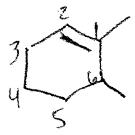
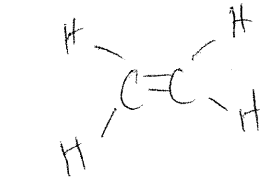
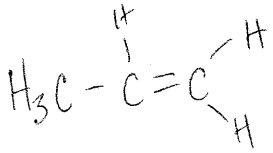
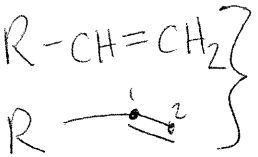
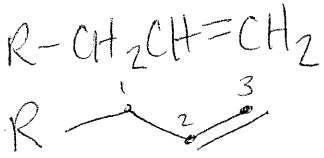
Mrs. Bonanno
O-Chem

Name_____
Date_____Period_____

Naming Summary for Alkenes and Alkynes

unsaturated hydrocarbons

	Alkene	Alkyne	Examples (Cis & Trans Isomers)
Parent Chain	Longest chain that contains the multiple bond -ene	-yne	 1-butene OR but-1-ene
Numbering	• C4 ↑ requires a # to ID the location of the multiple bond (low # priority) • If a tie - give the substituents low #'s • # indicating the bond may be placed before the root name OR the suffix		 2-methyl-2-butene OR 2-methylbut-2-ene  3-methyl-1-butene OR 3-methylbut-1-ene  3-propyl-1-heptene OR 3-propylhept-1-ene
More than 1 multiple bond 	Like substituents, give the position of each double bond and use suffix -diene, -triene, etc. Alternating double & single bonds, are said to be conjugated.	→ Enynes: compounds that contain double & triple bonds. • # from 1st mult. bond • If a tie, double bonds get lower number	 2-methyl-1,3-butadiene OR 2-methylbut-1,3-diene  3-bromo-2-hexen-4-yne OR 3-bromohex-2-ene-4-yne
Rings	• Double bond must be b/t C1 & C2 - no # used unless there are multiple double bonds. • First substituent is given lowest # possible		 1-methylcyclohexene  1,6-dimethylcyclohexene

Structure	IUPAC	common
	Ethene	Ethylene
	Propene	Propylene
$HC \equiv CH$	Ethyne	Acetylene (not an alkene)
$R = CH_2$		methylene
	(1-ethenyl) (branch; double bond)	vinyl
	(2-propenyl)	Allyl

substituents