Lewis Dot Structure Worksheet

If you are trying to come up to speed on Lewis structures, try working these examples to experience the range of complications. Remember, creating 3-D Lewis structures allows you to identify the existence of dipoles and molecular symmetry. Physical properties of molecules based upon polarity and the types of intermolecular interactions also follow from these structures.

CH_4	H_2O	CO_2	N_2	$BeCl_2$
C central atom, octet rule	O central atom, octet again	C central, famous double bond	Famous triple bond	Be is too small for octet
S/2/B = 1, single	S/2/B = 1, single	S/2/B = 2, double	S/2/B = 1, triple	S/2/B = 1, single
BF_3	C_2H_4	C_2H_6	CO	O_2
B is too small for octet	Multiple central, but C is octet	Multiple central, but C is octet	Another famous triple bond	Famous double bond
S/2/B = 1, single	not for multiple central atoms	not for multiple central atoms	S/2/B = 3, triple	S/2/B = 2, double
NO	NO_2^-	NO_3^-	NH_3	NH_4^+
Odd ball, no octet	Is this odd? e^- saves the day	Famous resonance	Famous tetrahedral, octet rule	Still tetrahedral even with H^+
S/2/B = 2.5, ???	S/2/B = 3/2, resonance	S/2/B = 4/3, resonance	S/2/B = 1, single	S/2/B = 1, single
O_3	ClF3	$SO_4^=$	SF_6	SF_4
Why is this famous?	What the heck is this? Hard.	Famous for not being resonance	6 bonds, must be octahedral	This one is NOT like CH_4
S/2/B = 3/2, resonace	S/2/B = 2/3, larger than octet	S/2/B = 1, single	S/2/B = 2/3, larger than octet	S/2/B = 3/4, larger than octet
I_3^-	$XeCl_2$	PF_5	$CO_3^=$	BrF_5
Laude's favorite example	Do these make bonds?	5 bonds make trigonal pyrimidal	Another famous resonance	Not 5 electron regions, but 6
S/2/B = _, larger than octet	S/2/B = _, larger than octet	S/2/B = 4/5, larger than octet	S/2/B = 4/3, resonance	S/2/B = 3/5, larger than octet
