

Answer Key

AP Chemistry: Molecular Geometry Review for Final

Be sure to remember how to draw Lewis Structures and determine shape and polarity!!!!

For the following molecules, draw the Lewis structure for each molecule, then write the number of effective pairs (e.p.) and lone pairs (l.p.) and the shape of the molecule. For only 2 atoms the central atom is underlined.

Lewis Structure	Effective Pairs (E.P.) on central atom	Lone Pairs (L.P.) on central atom	Shape	Angles in shape	Polar/ Non-Polar
$5 + 4(6) + 3 = 32e^-$ PO_4^{3-} 	4	0	tetra hydral	109.5°	N/A Poly atomic
$7 + 4(6) + 1 = 32e^-$ ClO_4^- 	4	0	tetra hydral	109.5°	N/A Poly atomic
$7 + 3(6) + 1 = 26e^-$ ClO_3^- 	4	1	tri Pyramidal	109.5	N/A Poly atomic
$7 + 2(6) + 1 = 20e^-$ ClO_2^- 	4	2	Vshape	109.5	N/A Poly atomic
$6 + 6(7) = 48e^-$ SF_6 	6	0	Octa hydral	90° + 180°	Non Polar
$7 + 3(7) = 28e^-$ BrF_3 	5	2	T-shape	90, 180	Polar
$7 + 5(7) = 42e^-$ ClF_5 	6	1	Sq Pyr	90, 180°	Polar
$5 + 3(6) + 1 = 24e^-$ NO_3^- 	3	0	Tri Plan	120°	N/A Poly atomic