

P R E D I C T I N G I O N I Z A T I O N E N E R G I E S

NAME _____

SECTION _____

The following table has ionization energies for the third row of the periodic table. The energies listed are in units of kJ/mol and represent the amounts of energy necessary to remove the first electron (I_1), the second electron (I_2), and so on for each atom. Some of the entries are left blank. Estimate what approximate value should be entered into each of the lettered boxes. Take into account the trends in the periodic table. But be careful! Take into account the nature of the electron that must be removed; what energy level and what orbital each electron occupies.

	Na	Mg	Al	Si	P	S	Cl	Ar
I_1	492	733	a	781	1013	b	1254	1524
I_2	4562	1447	1813	c	1900	2257	2296	2662
I_3	d	e	f	3231	g	3376	3848	3945
I_4	9539	10542	11574	4350	4958	4562	5160	5768
I_5	13349	13619	14853	16107	6269	6993	6539	7234
I_6	16599	17988	18326	19772	h	8488	9327	8806

Explain your reasons for the values you predicted for each box.