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.

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

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