

9.86 Simply average the 3 values:

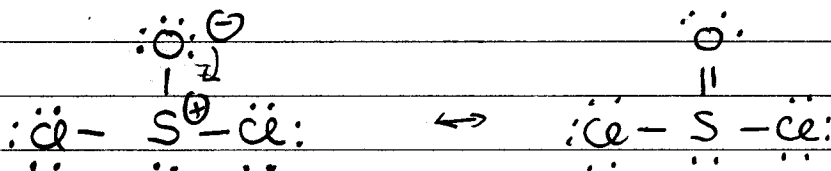
$$BE(N-H) = \frac{(453 + 360 + 356) \text{ kJ mol}^{-1}}{3}$$

best to include this!
↓ (but no pts off if you didn't)

$$= \boxed{390 \text{ kJ/mol}}$$

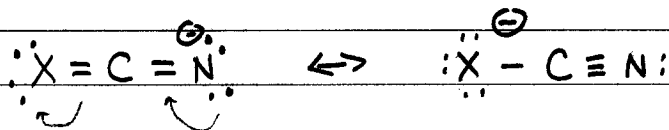
9.102 (a)

13 parts



(b) The Lewis structure w/ valence expansion and w/o formal charge is better

9.114



for $X=O$ (i.e. the cyanate ion), $\begin{array}{c} \text{:}\ddot{\text{O}}\text{:}^{\ominus} \\ | \\ \text{:}\ddot{\text{C}}-\text{N}\text{:} \\ \text{:}\quad\quad\quad\text{:} \end{array}$ is better.

for $X=S$ (i.e. the thiocyanate ion), $\begin{array}{c} \text{:}\ddot{\text{S}}=\text{C}=\ddot{\text{N}}\text{:}^{\ominus} \\ \text{:}\quad\quad\quad\text{:} \end{array}$ is better.

In both cases, the better Lewis structure has the negative formal charge on the most electronegative atom in the species.