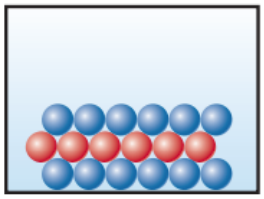
Exercise 2.8

The following diagram represents an ionic compound in which the red spheres represent cations and the blue spheres represent anions. Which of the following formulas is consistent with the drawing? KBr, K_2SO_4, $Ca(NO_3)_2$, $Fe_2(SO_4)_3$. Name the compound. [Sections 2.7 and 2.8]



Solution

Notice that there are two blue spheres for every red sphere in the drawing.

KBr - One cation is paired with one anion.

K_2SO_4 - Two cations are paired with one anion.

$Ca(NO_3)_2$ - One cation is paired with two anions.

$Fe_2(SO_4)_3$ - Two cations are paired with three anions.

The formula consistent with the drawing is $Ca(NO_3)_2$, named calcium nitrate.