What is the molarity of the following solutions given that:

1) 1.0 moles of potassium fluoride is dissolved to make 0.10 L of solution.

2) 1.0 grams of potassium fluoride is dissolved to make 0.10 L of solution.

3) 1.0 grams of potassium fluoride is dissolved to make 0.10 mL of solution.

4) 952 grams of ammonium carbonate are dissolved to make 1750 mL of solution.

5) 9.82 grams of lead (IV) nitrate are dissolved to make 465 mL of solution.
Solutions

What is the molarity of the following solutions given that:

1) 1.0 moles of potassium fluoride is dissolved to make 0.10 L of solution.
   \[1.0 \text{ mole KF} = 10. \text{ M}
   \]
   \[0.10 \text{ L soln}\]

2) 1.0 grams of potassium fluoride is dissolved to make 0.10 L of solution.
   \[1.0 \text{ g KF} \times \frac{1 \text{ mole KF}}{58 \text{ g KF}} = 0.0172 \text{ mol KF}
   \]
   \[0.0172 \text{ mol KF} = 0.17 \text{ M}
   \]
   \[0.10 \text{ L soln}\]

3) 1.0 grams of potassium fluoride is dissolved to make 0.10 mL of solution.
   \[1.0 \text{ g KF} \times \frac{1 \text{ mole KF}}{58 \text{ g KF}} = 0.0172 \text{ mol KF}
   \]
   \[0.0172 \text{ mol KF} = 170 \text{ M}
   \]
   \[1 \times 10^{-4} \text{ L soln}\]

4) 952 grams of ammonium carbonate are dissolved to make 1750 mL of solution.
   \[952 \text{ g } (\text{NH}_4)_2\text{CO}_3 \times \frac{1 \text{ mole } (\text{NH}_4)_2\text{CO}_3}{96 \text{ g } (\text{NH}_4)_2\text{CO}_3} = 9.92 \text{ mole } (\text{NH}_4)_2\text{CO}_3
   \]
   \[9.92 \text{ mole } (\text{NH}_4)_2\text{CO}_3 = 5.67 \text{ M}
   \]
   \[1.75 \text{ L soln}\]

5) 9.82 grams of lead (IV) nitrate are dissolved to make 465 mL of solution.
   \[9.82 \text{ g } \text{Pb(NO}_3)_4 \times \frac{1 \text{ mole } \text{Pb(NO}_3)_4}{455.2 \text{ g } \text{Pb(NO}_3)_4} = 0.0216 \text{ moles } \text{Pb(NO}_3)_4
   \]
   \[0.0216 \text{ moles } \text{Pb(NO}_3)_4 = 0.0465 \text{ M}
   \]
   \[0.0465 \text{ L soln}\]