Answer the questions below based on the following solution:

You have **400 ml of a 15 % MgCl₂ solution**
(MW Mg = 24.3, Cl = 35.5)
(Each mole of MgCl₂ = 3 osmoles in solution)
Show your work.

1. Since this is a 15% solution, how many grams of MgCl₂ are in 100 ml of the solution?
   
   **15% means 15 g/100ml . 15g**

2. How many grams total are in the 400 ml?
   
   **15g/100ml = Xg/400ml X= 60 g**

3. How many grams does 1 mole of MgCl₂ weigh?
   
   **Molecular weight if MgCl₂ is 24.3+35.5+35.5 = 95.3.**
   
   **One mole therefore weighs 95.3 g**

4. How many moles are in the 400 ml MgCl₂ solution?
   
   **There are 60 g in the 400 ml solution. Convert grams to moles.**
   
   **(60 g) (1 mole/95.3 g) = 0.63 moles**

5. How many osmoles are in the 400 ml MgCl₂ solution?
   
   **Each mole is 3 osmoles. Convert moles to osmoles.**
   
   **0.63 moles (3 osmole/mole) = 1.89 osmoles**

6. What is the osmolarity of the MgCl₂ solution?
   
   **With 1.89 osmoles in 400 ml, how many osmoles would be in 1 liter?**
   
   **1.89osmoles/400ml (1000ml/l) = 4.73 osmoles/liter**
   
   **Osmolarity is 4.73 OsM**