Learning strategies

Today’s strategies:

• Teach the material
• Create effective study groups
• Create your own practice exam
Marzano’s Taxonomy

- Retrieval
- Comprehension
- Analysis
- Knowledge Utilization
Learning Strategy 8: Teach the material

Explain a concept to:

– Yourself
– Someone in your class
– Someone not in the class

This strategy will show you what you don’t know
Learning Strategy 9: Effective study group

1. Choose 3 or 4 group members.

2. Set an agenda.
   - 1-3 minutes: Set session goal
   - 15 minutes: Independently study
   - 15-20 minutes: Group study
   - 15-20 minutes: Independent study
   - 10 minutes: Assess what you know
   - 5-10 minutes: Review & Set goals for next session

3. Set deadlines for assignments.

4. Complete tasks before each meeting.
Learning Strategy 9: Effective study group

• Be nice – do not make any derogatory comments about other students and their ideas

• Make sure that everyone participates and gets a chance to offer their thoughts

• Make sure everyone gets listened to (research shows that groups that perform badly almost always fail to listen to each other)

• Don’t interrupt when another student is talking

• Come to class prepared

• Post a welcoming picture in your Zoom profile, especially if you can’t have your video on
Learning Strategy 10: Create practice problems

> Requires deep knowledge of subject

> Can be a great tool to test yourself by exchanging problems with other students and then comparing answers

> You develop the confidence in your answer without the need of a solutions manual
Iron helps the body to produce red blood cells. If the amount of iron from our diet is not enough, iron supplements, ferrous sulfate tablets for example, may be prescribed. Mary was taking iron supplement for 60 days. Pharmacist used 22g of FeSO$_4$·7H$_2$O to fill out the prescription. How many pills per day did the pharmacist prepare for Mary, if 1 pill contains 200 mg of FeSO$_4$? Molar mass of FeSO$_4$ is 152 g/mol, molar mass of FeSO$_4$·7H$_2$O is 278 g/mol, melting point of FeSO$_4$·7H$_2$O is 147 F.
Dimensional analysis problem

Given
pills for 60 days
22g of FeSO₄·7H₂O
1 pill contains 200 mg of FeSO₄
MM FeSO₄ (compound B) is 152 g/mol
FeSO₄·7H₂O (compound A) is 278 g/mol

Find
How many pills (A) per day?

1) mass (A)/day = 22g/60 days = 366.7 mg/day

2) For 1 pill: mol (B)/pill = mol (A)/pill
200mg/152(g/mol) = 0.001316 mol/pill

3) mass (A)/pill = mol/pill * MM (A)
mass (A)/pill = 0.001316 mol/day * 278 g/mol
mass (A)/pill = 0.366 g/pill = 366 mg/pill

Answer: compare 3) and 1) => 1 pill/day
Iron helps the body to produce red blood cells. If the amount of iron from our diet is not enough, iron supplements, ferrous sulfate tablets for example, may be prescribed. Mary was taking iron supplement for 60 days. Pharmacist used 22g of FeSO$_4$·7H$_2$O to fill out the prescription. How many pills per day did the pharmacist prepare for Mary, if 1 pill contains 200 mg of FeSO$_4$? Molar mass of FeSO$_4$ is 152 g/mol, molar mass of FeSO$_4$·7H$_2$O is 278 g/mol, melting point of FeSO$_4$·7H$_2$O is 147 F.

Iron helps the body to produce red blood cells. If the amount of iron from our diet is not enough, iron supplements, ferrous sulfate tablets for example, may be prescribed. Mary was taking 1 pill of iron supplement for 60 days. 1 pill contains 200 mg of FeSO$_4$. How many grams of FeSO$_4$·7H$_2$O did the pharmacist use to fill out the prescription. Molar mass of FeSO$_4$ is 152 g/mol, molar mass of FeSO$_4$·7H$_2$O is 278 g/mol, melting point of FeSO$_4$·7H$_2$O is 147 F.
Dimensional analysis problem

**Given**

1 pills per day
60 days
1 pill contains 200 mg of FeSO$_4$
MM FeSO$_4$ (compound B) is 152 g/mol
FeSO$_4$·7H$_2$O (compound A) is 278 g/mol

**Find**

How many grams of A did the pharmacist use to fill out the prescription?

1) **Total amount of pills** = 1 pill/day * 60 days = 60 pills

2) **For 1 pill**:
   - mol (B)/pill = mol (A)/pill
   - $200 \text{ mg} / 152 \text{ g/mol}$ = 0.001316 mol/pill

3) **mass (A)/pill** = mol/pill * MM (A)
   - mass (A)/pill = 0.001316 mol/day * 278 g/mol
   - mass (A)/pill = 0.366 g/pill = 366 mg/pill

**Answer:** compare 3) and 1) =>

$0.366 \text{ g/pill} \times 60 \text{ pills} = 22 \text{ grams}$