

**(A) Lesson Objectives:**

- a. Introduce arithmetic sequences through several applications.
- b. Introduce the formulas associated with arithmetic sequences.
- c. Apply arithmetic sequences to real world scenarios.

**(B) Exploring Patterns and Sequences**

- a. Comment upon any common pattern you see in these sequences

(i) \$100, \$110, \$120, \$130, \$140, \$150, .....

(ii) 8, 12, 16, 20, 24,.....

(iii) 11, 9, 7, 5, 3,.....

- b. Given the sequence \$100, \$110, \$120, \$130, \$140, \$150, ..... → develop a formula that you can use to predict the 407<sup>th</sup> term. EXPLAIN your prediction/formula
- c. Given the sequence 8,12,16,20,24,....., → develop a formula that you can use to predict the 1292<sup>th</sup> term. EXPLAIN your prediction/formula
- d. Given the sequence 11, 9, 7, 5, 3,..... → develop a formula that you can use to predict the 47<sup>th</sup> term. EXPLAIN your prediction/formula
- e. I have simple “allowance” scheme for my sons. I “paid” them an initial 100 pesos when we started working at ISM in August of 2009, but I every month I gave them each an additional 20 pesos from their previous month’s allowance.
  - i. List the allowance amounts my sons “earned” for the rest of 2009 (sept, oct, nov, dec).
  - ii. Predict what my son’s current monthly allowance is (Nov 2011).
  - iii. Assuming that I stay at ISM until my youngest son Ian graduates (June 2020), what would his monthly allowance be?
  - iv. However, I decide to leave ISM in June of 2013 (after you guys graduate anyway!!!). How much TOTAL moneys have my sons received from me (I have three sons).

**(C) Key Ideas – Formula for Arithmetic Sequences**

- a. The formula for the “general term” of an arithmetic sequence is

