

## WORKSHEET: Arithmetic Seq & Series

### Exercises (Arithmetic Series):

- 1) Find the sum of  $\{-3, 2, 7, 12, \dots, 132\}$ .
- 2) Find the sum of  $\{-7, -9, -11, -13, \dots, -63\}$ .
- 3) Find the sum of  $\{a - b, 2a, 3a + b, \dots, a_{10}\}$ .
- 4) Find the sum of  $\{5a - 3b, 4a - 2b, 3a - b, 2a, \dots, a_n\}$ .
- 5) The 5<sup>th</sup> term of an arith. seq. is 16 while the 12<sup>th</sup> term is 37. Find the sum of the 1<sup>st</sup> 30 terms.
- 6) Find the sum of the 1<sup>st</sup> 100 terms of the arith. seq. where the 10<sup>th</sup> & 16<sup>th</sup> terms are 118 & 184, resp.
- 7) The 16<sup>th</sup> term of an arith. seq. is 185 and the sum of the 1<sup>st</sup> 15 terms is 1335. Find the sum of the 1<sup>st</sup> 10 terms.
- 8) The 10<sup>th</sup> term of an arith. seq. is 25 and the sum of the 1<sup>st</sup> 20 terms is 530. Find the 17<sup>th</sup> term of the seq.
- 9) Find the sum of all the even integers from 20 to 642.
- 10) Find the sum of the 1<sup>st</sup> 30 positive multiples of 8.
- 11) How many terms of the arith. seq.  $\{2, 4, 5, 7, \dots\}$  will give a sum of 1001?
- 12) Find out how many terms of the arith. seq.  $\{12, 10.5, 9, 7.5, \dots\}$  must be taken in order that the sum will be equal to 0.

### Word Problems (Arithmetic Sequence & Series):

- 1) Sherry works at the local fast food chain at the rate of P32.50/hr. The management said that, depending on her performance, her hourly wage will be increased by P7.50/hr every month. In how many months will she be receiving P85 an hour?
- 2) Jerry deposited P20,000 on an investment that will give P1,750 for every year that his money stays in the account. How much money will he have in his account by the end of year 8?
- 3) There is a stack of logs in the backyard. There are 15 logs in the 1<sup>st</sup> layer, 14 in the second, 13 in the third, 12 in the fourth, and so on with the last layer having one log. How many logs are in the stack?
- 4) In his piggy bank, Bingo dropped P1.00 on May 1, P1.75 on May 2, P2.50 on May 3 and so on until the last day of May.
  - a) How much did he drop in his piggy bank on May 19?
  - b) What was his total deposit in his piggy bank for the month of May?
- 5) There are 20 rows of seats on a concert hall: 25 seats are in the 1<sup>st</sup> row, 27 seats on the 2<sup>nd</sup> row, 29 seats on the 3<sup>rd</sup> row, and so on. If the price per ticket is P2,300, how much will be the total sales for a one-night concert if all seats are taken?
- 6) Sonia has 55 blocks. She decides to stack up all the blocks so that each row has one less block than the row below. She wants to end up with just 1 block on top. How many should she put in the bottom row?
- 7) A theater has 32 rows of seats. If there are 26 seats in the 1<sup>st</sup> row, 30 in the 2<sup>nd</sup>, 34 in the 3<sup>rd</sup>, and so on, how many seats are there in all?
- 8) A tube well is bored 800 meters deep. The 1<sup>st</sup> meter costs P250 and the cost per meter increases by P50 for every subsequent meter. Find the cost of boring the 750<sup>th</sup> meter and the total cost incurred for the entire job.

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