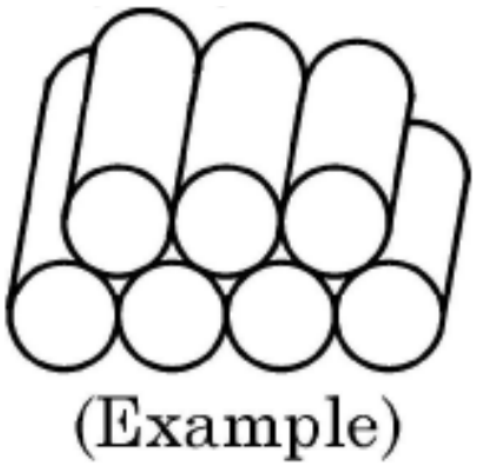
# REVISION SHEET 1 CH 5 X

**Q1.** Inan A.P. of 40 terms, the sum of first 9 terms is 153 and the sum of last 6 terms is 687. Determine the first term and common difference of A.P. Also, find the sum of all the terms of the A.P.

**Q2.** The sum of first and eighth terms of an A.P. is 32 and their product is 60. Find the first term and common difference of the A.P. Hence, also find the sum of its first 20 terms.

**Q3.** The ratio of the 11th term to 17th term of an A.P. is 3 : 4. Find the ratio of 5th term to 21st term of the same A.P. Also, find the ratio of the sum of first 5 terms to that of first 21 terms.

**Q4.** 250 logs are stacked in the following manner:
22 logs in the bottom row, 21 in the next row, 20 in the row next to it and so on (as shown by an example). In how many rows, are the 250 logs placed and how many logs are there in the top row?



(Example)

**Q5.** The sum of first n terms of an A.P. is $5n^2 + 3n$. If its $m^{th}$ term is 168, find the value of m Also find the $20^{th}$ term of this A.P.

**Q6.** If the sum of the first p terms of an A.P. is q and the sum of the first q terms is p; then show that the sum of the first (p + q) terms is {-(p + q)}.

**Q7.** If 6 times the $6^{th}$ term of an A.P. is equal to 9 times the 9th term, show that its $15^{th}$ term is zero.

**Q8.** If 1 + 4 + 7 + 10 + ... + x = 287, find the value of x.

**Q9.** In an A.P., the first term is -4, the last term is 29 and the sum of all its terms is 150. Find its common difference.

**Q10.** Find the $60^{th}$ term of the AP 8, 10, 12,.... if it has a total of 60 terms and hence find the sum of its last 10 terms.

**Q11.** The houses in a row are numbered consecutively from I to 49. Show that there exists a value of X such that sum of numbers of houses proceeding the house numbered X is equal to sum of the numbers of houses following X.

**Q12.** If the sum of first 7 terms of an AP is 49 and that of first 17 terms is 289, find the sum of its first n terms.

**Q13.** If the sum of first p terms of an A.P. is equal to the sum of the first q terms, then find the sum of the first (p + q) terms.

**Q14.** How many multiples of 4 lie between 10 and 250? Also find their sum.

**Q15.** How many terms of the Arithmetic Progression 45, 39, 33, ... must be taken so that their sum is 180? Explain the double answer.

**Q16.** Find the sum:
(-5) + (-8) + (-11) + ... + (-230)

**Q17.** The sum of n terms of an A.P. is $5n^2 – 3n$. Find the A.P. Hence, find its $10^{th}$ term.

**Q18.** The sums of first n terms of three arithmetic progressions are $S_1$, $S_2$ and $S_3$ respectively. The first term of each A.P. is 1 and their common differences are 1, 2 and 3 respectively. Prove that $S_1 + S_3 = 2S_2$.

**Q19.** The $17^{th}$ term of an AP is 5 more than twice its $8^{th}$ term. If the $11^{th}$ term of the APis 43, then find its $n^{th}$ term.

**Q20.** Which term of the Arithmetic Progression -7, -12, -17, -22, ... will be -82? Is -100 any term of the A.P.? Give reason for your answer.