1. $3 + 6 + 9 + 12 +$…… is an arithmetic series.
   a. Find the sum of first 20 terms of natural numbers.
   b. If the sum of n terms of the series is 630, find the values of n.
   c. Considering the first term of the series as the first term and the common difference as common ratio, construct a new series and find sum of first 10 terms of the series.
2. log2 + log4 + log8 + …… is a series.
   a. What kind of series is it?
   b. What is the sum of first 7 th term of the series log2 + log4 + log8 + ……?
   c. If the m th term of an arithmetic series is n and n th term is m, what is the (m + n) th term?
3. The 4^{th} and 10^{th} term of a geometric series are $\frac{1}{3}$ and $\frac{1}{81}$ and the sum of the first 12 terms and the sum of the first 24 terms are 222 and 876 of an arithmetic series.
   a. Which term is 303 of the series 3 + 5 + 7 + 9+……? (Ex-13.1:Q.No-7)
   b. Find the geometric series.
   c. Calculate the 60^{th} terms of arithmetic series. (Ex-13.1:Q.No-19)
4. 6 + p + q + r + 486 + ……is a geometric series.
   a. Which term of the series 128 + 64 + 32 + ……. is $\frac{1}{2}$?
   b. Find the value of p, q & r.
   c. The sum of the first m terms of an arithmetic series is n & the first n terms is m. Find the sum of the first (m + n) terms.
5. The sum of first 'n' terms of the series 2 + 4 + 8 + 16 + …….. is 1022 and 10^{th} term & 16 term of an arithmetic series are 34 & 52 respectively.
   a. Find the sum of the series $1^2 + 2^2 + 3^2 + 4^2 +$ ……$+ 11^2$
   b. Find the value of 'n'
   c. Find the sum of first 20 term of the arithmetic series.

Question ▶1 $3 + 6 + 9 + 12 +$ ..... *[All Board -'18]*

a. Find the sum of first 20 terms of natural numbers. 2

b. If the sum of n terms of the series is 630, then find the value of n. 4

c. Considering the first term of the series as first term and the common deference as common ration, construct a new series and find the sum of first 10 terms of the series. 4

Question ▶2 Sixth and eleventh terms of an arithmetic series are 30 and 55 respectively. *[S.B.-'16]*

a. Form two equations taking 'a' as first term and 'd' as common difference.
b. Find the series according to the stem. 2
c. If sum of n terms of the series is 6375, find the value of n. 4

4

(Shown)

Question ▶5 The 4^{th} and the 10^{th} terms of a geometric series are $\frac{1}{3}$ and $\frac{1}{81}$ and the sum of the first 12 terms and first 24^{th} terms are 222 and 876 of an another arithmetic series. *[Ctg. B.-'19]*

a. Which term is 303 of the series 3 + 5 + 7 + 9 + ...? 2
b. Find the geometric series. 4
c. Calculate the 60^{th} terms of arithmetics series. 4