# EduSahara™ Learning Center Assignment

**Grade : Class X, CBSE**
**Chapter : Arthimetic Progressions**
**Name : Arithmetic Progressions Miscellaneous**

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1. The $t_5$ of an A.P. is $38$ and the $t_{19}$ is $164$ . Find $t_9$ .

   (i) $72$ (ii) $73$ (iii) $75$ (iv) $76$ (v) $74$

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2. The $t_{19}$ of an A.P. is $\frac{95}{28}$ and the $t_8$ is $\frac{113}{56}$ . Find $t_{16}$ .

   (i) $\frac{169}{58}$ (ii) $\frac{169}{54}$ (iii) $\frac{171}{56}$ (iv) $\frac{169}{56}$ (v) $\frac{167}{56}$

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3. Find the sum of first 65 natural numbers

   (i) $2145$ (ii) $2144$ (iii) $2146$ (iv) $2143$ (v) $2148$

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4. Find the next 4 terms of the following A.P.
   $(-5a-2b), (-a+2b), (3a+6b), \ldots$

   (i) $(-2a+4b), (2a+8b), (6a+12b), (10a+16b)$

   (ii) $(2a+8b), (6a+12b), (10a+16b), (14a+20b)$

   (iii) $(7a+10b), (11a+14b), (15a+18b), (19a+22b)$

   (iv) $(12a+12b), (16a+16b), (20a+20b), (24a+24b)$

   (v) $(11a+14b), (15a+18b), (19a+22b), (23a+26b)$

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5. Find $t_n$ of the A.P $1, 4, 7, 10, 13, \ldots$

   (i) $(3n+1)$ (ii) $(-n-2)$ (iii) $(3n-1)$

   (iv) $(3n-2)$ (v) $(6n-2)$

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6. Find $t_n$ of the A.P $\frac{2}{3}, \frac{19}{24}, \frac{11}{12}, \frac{25}{24}, \frac{7}{6}, \ldots$

   (i) $(\frac{1}{8}n+\frac{2}{3})$ (ii) $(\frac{25}{8}n+\frac{13}{24})$ (iii) $(\frac{1}{8}n+\frac{29}{24})$

   (iv) $(-\frac{15}{8}n+\frac{13}{24})$ (v) $(\frac{1}{8}n+\frac{13}{24})$

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7. The $t_7$ of an A.P is $p$ and $t_8$ is $q$ . Find $t_{14}$ and $t_n$ .

   (i) $(p+q), (-pn+15p+qn-13q)$

   (ii) $(-7p+8q), (-pn+7p+qn-6q)$

(iii) $(-6p+7q)$ , $(-pn+8p+qn-7q)$

(iv) $(-6p+7q)$ , $(-pn+p+qn-q)$

(v) $(-5p+6q)$ , $(-pn+8p+qn-7q)$

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8. Determine k so that $(9k+2)$ , $(3k+9)$ and $(8k+3)$ are the consecutive terms of an A.P

(i) $\frac{15}{13}$ (ii) $\frac{13}{11}$ (iii) $\frac{11}{9}$ (iv) $1$ (v) $\frac{15}{11}$

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9. The product of two numbers is $640$ and their arithmetic mean is $26$ . Find the two numbers.

(i) $(20, 31)$ (ii) $(20, 32)$ (iii) $(34, 22)$

(iv) $(22, 32)$ (v) $(21, 33)$

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10. Find the sum of all natural numbers between 1 and 100 which are multiples of $4$ ?

(i) 1200 (ii) 1197 (iii) 1201 (iv) 1202 (v) 1199

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11. Find the sum of all natural numbers between 100 and 200 which are multiples of $6$ ?

(i) 2552 (ii) 2550 (iii) 2549 (iv) 2547 (v) 2551

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12. Find the sum of the following A.P. series $(7x+9y)$ , $4y$ , $(-7x-y)$ . . . to 15 terms

(i) $(-532x-324y)$

(ii) $(-728x-520y)$

(iii) $(-630x-390y)$

(iv) $(-546x-334y)$

(v) $(-714x-502y)$

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13. Find $t_n$ of the A.P $3, 7, 11, \ldots$

(i) $(-1)$ (ii) $(4n+2)$ (iii) $(4n+3)$

(iv) $(5n-1)$ (v) $(4n-1)$

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14. If $S_{50}$ and $S_{80}$ of an A.P. are $6225$ and $15960$ respectively, then $S_{130}$ =

(i) 42188 (ii) 42186 (iii) 42185 (iv) 42183

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If $x \neq y$ and the sequences $x, a_1, a_2, y$ and $x, b_1, b_2, y$

15. each are in A.P., then $\frac{a_2 - a_1}{b_2 - b_1} =$

(i) $(\frac{-3}{4})$ (ii) 1 (iii) $\frac{3}{2}$ (iv) $\frac{2}{3}$ (v) $\frac{4}{3}$

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16. If there are n arithmetic means between a and b, the common difference d =

(i) $\frac{(a+b)}{(n+1)}$ (ii) $\frac{(a-b)}{(n+1)}$ (iii) $\frac{(b-a)}{(n-1)}$ (iv) $\frac{(n-1)}{(a+b)}$ (v) $\frac{(b-a)}{(n+1)}$

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17. The sum of first n natural number is

(i) $\frac{(n)(n+1)}{2}$ (ii) $\frac{(n-1)(n+1)}{2}$ (iii) $\frac{n^2 (n+1)^2}{4}$

(iv) $\frac{(n)(n-1)}{2}$ (v) $\frac{(n)(n+1)(2n+1)}{6}$

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The measures of the interior angles of a convex polygon are in A.P.

18. If the smallest angle is 55 and the largest angle is 125 ,

then the number of sides of the polygon is

(i) 4 (ii) 6 (iii) 1 (iv) 3 (v) 5

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19. If the $t_n$ of an A.P is $(2n+8)$ , find $S_n$

(i) $\frac{(8)(n^2+n)}{2} + 8n$ (ii) $\frac{(2)(n^2+n)}{2} + 8n$

(iii) $\frac{(3)(n^2+n)}{2} + 9n$ (iv) $\frac{(5)(n^2+n)}{2} + n$

(v) $\frac{(9)(n^2+n)}{2} + 8n$

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20. Determine $t_2$ and $t_n$ of an A.P. whose $t_4$ is 29 and $t_6$ is 43 .

(i) $16 ; (7n+9)$ (ii) $14 ; (7n+8)$ (iii) $17 ; (11n+1)$

(iv) $15 ; (7n + 1)$ (v) $13 ; (4n + 1)$

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# Assignment Key

1) (v)
2) (iv)
3) (i)
4) (iii)
5) (iv)
6) (v)
7) (iii)
8) (ii)
9) (ii)
10) (i)
11) (ii)
12) (iii)
13) (v)
14) (iii)
15) (ii)
16) (v)
17) (i)
18) (i)
19) (ii)
20) (iv)