# DISCRETE

EE23BTECH11006 - Ameen Aazam*

**Question :** Find the sum of the following APs:
(a) $2, 7, 12, \ldots$ to 10 terms.
(b) $-37, -33, -29, \ldots$ to 12 terms.
(c) $0.6, 1.7, 2.8, \ldots$ to 100 terms.
(d) $\frac{1}{15}, \frac{1}{12}, \frac{1}{10}, \ldots$ to 11 terms.

**Solution:** From (**??**), we get the sum to $n$ terms,

| Input Parameters | Values | Description |
|---|---|---|
| $x(0)$ | $2, -37, 0.6, \frac{1}{15}$ | First term of AP |
| $d$ | $x(1) - x(0)$ | Common difference of AP |
| $x(n)$ | $[x(0) + nd]u(n)$ | General term of AP |
| $y(n-1)$ | | Sum to $n$ terms of AP |

TABLE 4
PARAMETERS

$$y(n) = \frac{(n+1)}{2}\{2x(0) + nd\}\,u(n) \tag{1}$$

(a)

$$x(0) = 2 \tag{2}$$
$$d = 5 \tag{3}$$
$$\implies s(9) = 245 \tag{4}$$

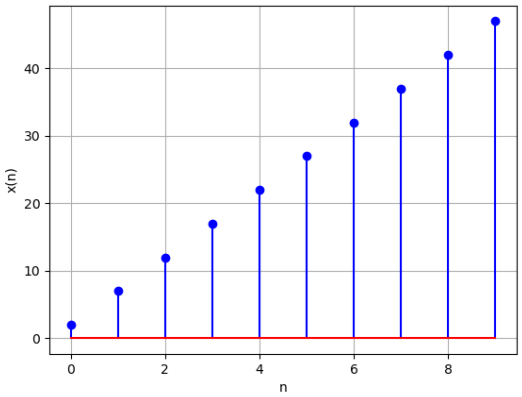


Fig. (a). 1*st* AP

(b)

$$x(0) = -37 \tag{5}$$
$$d = 4 \tag{6}$$
$$\implies s(11) = -180 \tag{7}$$

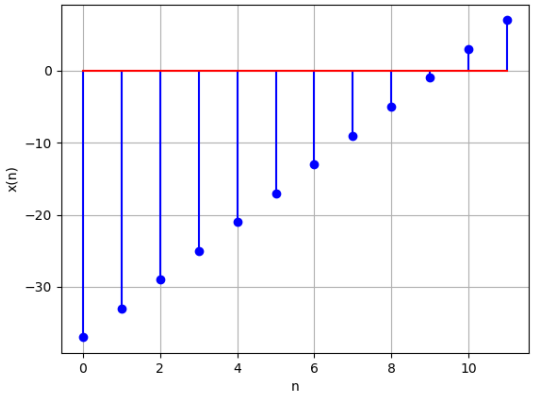


Fig. (b). 2*nd* AP

(c)

$$x(0) = 0.6 \tag{8}$$
$$d = 1.1 \tag{9}$$
$$\implies s(99) = 5505 \tag{10}$$

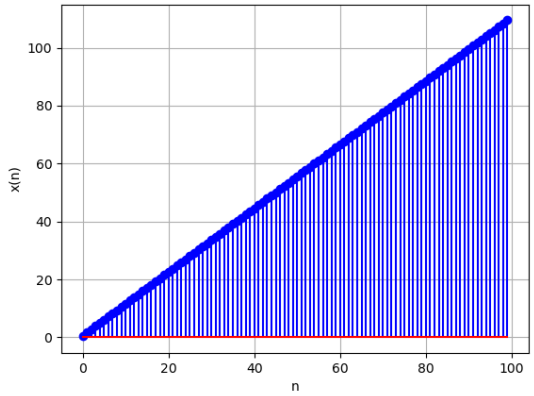


Fig. (c). 3*rd* AP

(d)

$$x(0) = \frac{1}{15} \tag{11}$$

$$d = \frac{1}{60} \tag{12}$$

$$\implies s(10) = 1.65 \tag{13}$$

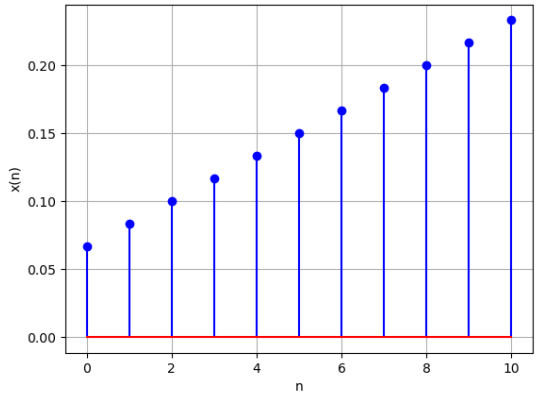


Fig. (d). 4*th* AP