24 $lly tUjj

,gghljijf fwgjD}lhf ehqfs.....

- $lly njhlnuhdwd ngahlggll cWgigf fhzNghk.
- $lly njhlnuhdwd ngahlggll vz zfifAila cWgGffsd $lLjnjhifiaf fhzNghk.
- $lly ,iliaf fhzNghk.

ahNjDk xU vzNfhyjjy mLjJtUk vzfisf fhZjy gww Kdida tFgGfsy fwWsshfs. ,jd %yk vz Zk vzNfhyk› ,ulil vzNfhyk› xwiw vzNfhyk gww gy tlaqfis eqfs mweJsshfs.

vz Zk vzfs› ,ulil vzfs› xwiw vzfs vdgd xU Kiwahd Nfhyqfs vdgij mwejUggJ Vd mtrakhfdwJ?

NfhyqfSfF Vwg ngahlggll vejnthU cWgigAk ,yFthff fhz KbAk.

mLjJ tUk vejnthU ,U cWgGffSffilaYss tjjahrk› khwhg ngWkhdkhfTss vznjhlu $lly tUjj vdggLk.

fNo jugglLss vz Zk vz Nfhyjijg ghUqfs.
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

thirahfTss ahNjDk mLjJ tUk ,UvzfSffilayhd tjjahrk 1 MFk. ,jnjhlhy vejnthU cWggd ngWkhdjijAk fhz KbAk.

,ulil vz Nfhyk. 2, 4, 6, 8, 10, 12, 14 .....
ahNjDk mLjJtUk ,U vzfSffilayhd tjjahrk 2 MFk.
xwiw vzNfhyk. 1, 3, 5, 7, 9, 11, 13, 15, 17 .....
,qF ahNjDk mLjJtUk ,U vzfSffilayhd tjjahrk 2 MFk.

KfNfhz vzNfhyk (Triangular Numbers) 1, 3, 6, 10, 15, 21 ..... MFk. ,qF ahNjDk mLjJtUk ,U vzfSffilayhd tjjahrk rkdhf ,yiy.

nrawghL - 1

fNo juggl Lss vznjhlufsy Yss mLjJss ,U cWgGffSff ila Yss tjjahrjij vOJNthk.

(i) 2, 5, 8, 11, 14 ..... (ii) 20, 16, 12, 8, 4 ..... (iii) 6, 10, 14, 18 , 22 .....
(iv) 5, 12, 19, 26 ..... (v) 4, 10, 16, 22 .....

$lly tUjja Yss mLjJtUk ,U cWgGffSff ila Yss tjjahrk rkdhfTssjhy ,J nghJ tjjahrk vd mioffggLk.

(1) 2, 4, 6, 8

$$\left.\begin{array}{l} 4 - 2 = 2 \\ 6 - 4 = 2 \\ 8 - 6 = 2 \end{array}\right\} \begin{array}{l} \text{nghJ tjjahrk 2} \\ \text{Common difference 2} \end{array}$$

nghJ tjjahrk d vDk Fwalbdhy vOjggLk

(2) 3, 6, 9, 12, 15

$$\left.\begin{array}{l} 6 - 3 = 3 \\ 9 - 6 = 3 \\ 12 - 9 = 3 \\ 15 - 12 = 3 \end{array}\right\} \begin{array}{l} \text{nghJ tjjahrk 3} \\ \text{d = 3} \end{array}$$

(1) fNo juggl Lss vznjhlufsy UeJ vit $lly tUjj vdj njheJ vOJf.

(i) 2, 6, 10, 14, 18 ..... (ii) 3, 5, 8, 12, 17 .....
(iii) 3, 5, 6, 8, 9, 11 ..... (iv) 20, 17, 14, 11 .....
(v) 50, 53, 56, 59 ..... (vi) 7, 13, 19, 25 .....

(2) fNo juggl Lss $lly tUjjfsd nghJ tjjahrjij vOJf.

(i) 5, 7, 9, 11, 13 ..... (ii) 12, 15, 18, 21 .....
(iii) 18, 15, 12, 9, ... (iv) 3.5, 3.7, 3.9, 4.1 .....
(v) $2\frac{1}{2}$, 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$..... (vi) 100, 97.5, 95, 92.5 .....

(3) fNo juggl Lss $lly tUjjfs Yss mLjJ tUk ,U cWgGffis vOJf.

(i) 8, 15, 22, 29 ..... (ii) 5, 8, 11, 14, ...
(iii) 27, 25, 23, 21, ... (iv) 36, 40, 44, 48, ...
(v) 1.5, 2.7, 3.9, 5.1 ..... (vi) 18, 22, 26, 30 .....

$lly tUjjnahdwd n MtJ cWgigf fhzNghk.

2, 6, 10, 14, 18, ... vdgJ xU $lly tUjjahFk.

tUjjnahdwy cWgG Term vdggLk Mqfy nrhyyhy mioffggLk. vdNt Kjyhk cWgig T_1 vdTk› ,uzlhk cWgig T_2 vdTk› %dwhk cWgig T_3 vdTk 25 tJ cWgig T_{25} vdTk miogNghk.

,jnjhlhy

$T_1 = 2 = 2$

$T_2 = 6 = 2 + 1 \times 4$

$T_3 = 10 = 2 + 2 \times 4$

$T_4 = 14 = 2 + 3 \times 4$

$T_n = 14 = 2 + (n-1) \times 4$

$lly tUjjay Kjyhtj cWgG a MfTk nghJ tjjark d MfTk ,Uggd

$T_1 = a$

$T_2 = a + d$

$T_3 = a + 2d$

⋮ ⋮

$T_{10} = a + 9d$

$T_n = a + (n-1)d$

vdNt $lly tUjjad n tJ cWgG $\boxed{T_n = a + (n-1)d}$ MFk.

cjhuzk1

5, 8, 11, 14 ..... vDk tUjjad 12 tJ cWgigf fhZqfs.

$T_n = a + (n-1)d$

$a = 5,\ d = 3,\ n = 12$

$T_{12} = 5 + (12-1)3$

$= 5 + 11 \times 3$

$= 5 + 33$

$= 38$

cjhuzk 2

$lly tUjjnahdwy ehdfhtJ cWgG 11› nghJ tjjahrk –3 MFk. 10 MtJ cWgigf fhzf.

$T_4 = 11 \quad d = -3$

vdNt $a + 3d = 11$

$a + 3\times(-3) = 11$

$a - 9 = 11$

$a = 20$

$T_{10} = a + 9d$

$= 20 + 9\times(-3)$

$= 20 - 27$

$T_{10} = -7$

cjhuzk 3

$lly tUjjnahdwy ehdfhtJ cWgG 14› xdgjhtJ cWgG 29› 20tJ cWgigf fhzf.

$T_4 = 14 \qquad T_9 = 29 \qquad T_{20} = ?$

$a + 3d = 14 \longrightarrow (1)$

$a + 8d = 29 \longrightarrow (2)$

(2) - (1)

$5d = 15$

$d = 3$

d = 3 ia (1) ,y gujal

$a + 3d = 14$

$a + 3\times 3 = 14$

$a + 9 = 14$

$a = 14 - 9$

$a = 5$

, jdgb $T_{20} = a + 19d$

$= 5 + 19\times 3$

$= 5 + 57$

$= 62$

/ 20 tJ cWgG 62 MFk.

cjhuzk 4

18, 22, 26, 30 ..... tUjjay 74 vjjidahtJ cWggFk?

$a = 18 \quad d = 4 \quad T_n = 74 \quad n = ?$

$T_n = a + (n-1)d$

$74 = 18 + (n-1)4$

$74 = 18 + 4n - 4$

$74 = 14 + 4n$

$74 - 14 = 4n$

$60 = 4n$

$15 = n$

n cWgGffisf nfhz l njhlu;y ,Wj; cWgig *l* vdf nfhsf. mjdgb *l* = a + (n - 1) d lg gadgLjj; ,jidj jhff KbAk. cWgGfs;d vz z;fif 15 MFk)

$\therefore$ 74 MdJ 15 tJ cWgghFk.

cjhuzk 5

3 ,wFk 100 ,wFk ,ila;Yss ehdf;d klqFfs vjjid cssd?

3 ,wF mLjJss 4 ,d klqFfs 4, 8, 12, 16..... MFk.

mit $lly t;Ujj;ahFk.

100 ,wF KddhYss 4 ,d klqF 96 MFk.

vdNt t;Ujj;a;d filr; cWgG 96 MFk.

a = 4, d = 4, T_n = 96 MFk.

$T_n = a + (n-1)d$

$96 = 4 + (n-1)4$

$96 = 4 + 4n - 4$

$96 = 4n$

$24 = n$

cWgGfs;d vz z;fif 24 MFk. vdNt 3 ,wFk 100 ,wFk;ila;Yss 4 ,d klqFfs 24 cssd.

gawr 24'2

(1) fNo juggLss xtnthU $lly t;Ujj;fFk vj;Nu fhllggLss cWgigf fhzf

(i) 12, 15, 18, 21, ... (21 tJ cWgG)

(ii) 18, 15, 12, ... (7 tJ cWgG)

(iii) 2.5, 3, 3.5, 4 ..... (11 tJ cWgG)

(iv) 4, 7, 10, 13, ... (16 tJ cWgG)

(v) 14, 19, 24, 29 ..... (13 tJ cWgG)

(vi) a, 2a, 3a, 4a, ... (12 tJ cWgG)

(2) (i) KjyhtJ cWgG 11 MfTk nghJ tɹjjɹahrk 5 MfTk css $lly tɹUjjɹaɹy 66 vjjidahtJ cWgghFk?

(ii) KjyhtJ cWgG 7› ehdfhtJ cWgG 11› 55 vjjidahtJ cWgG?

(3) (i) $lly tɹUjjɹnahdwɹy nghJ tɹjjɹahrk -3 MFk. 12tJ cWgG -6 MFk. 1k› 20k cWgGffisf fhzf.

(ii) nghJ tɹjjɹahrk $\frac{-3}{2}$" 25 tJ cWgG 44 MFk. 1k› 12k cWgGffisf fhzf.

(iii) 1 tJ cWgG 3› 16 tJ cWgG 63 MFk. nghJ tɹjjɹahrjijAk 20 tJ cWgigAk fhzf.

(iv) nghJ tɹjjɹahrk 4, 22 tJ cWgG 16 MFk. 15 tJ cWgigf fhzf.

(v) nghJ tɹjjɹahrk 8, 16 tJ cWgG 132 MFk. 23 tJ cWgigf fhzf.

(4) (i) 10 ,wFk 200 ,wFk ,ilggll 3 My kjɹaɹdwɹ tFfff$ba vzfs vjjid cssd?

(ii) 100 ,wFk 300 ,wFk ,ilaɹy vjjid xwiw vzfs cssd?

(5) (i) $lly tɹUjjɹaɹd 9 tJ cWgG 60 MFk. 16 tJ cWgG 109 MFk. KjyhtJ cWgigAk nghJ tɹjjɹahrjijAk fhzf.

(ii) $lly tɹUjjɹaɹy 12 tJ cWgG 67 MFk. 16 tJ cWggɹdJk 23 tJ cWggɹdJk $lLjnjhif 89 MFk. 10 tJ cWgigf fhzf.

(iii) $lly tɹUjjɹaɹy 10 tJ cWgG 24 MFk. 25 tJ cWgG 16 MFk. vjjidahtJ cWggɹd ngWkhdk 0 MFk.?

(iv) $lly tɹUjjɹaɹd 9 tJ cWgG 59 MFk. 16 tJ cWgG 108 MFk. filrɹ cWgG 248 MFk. tɹUjjɹaɹy vjjid cWgGffs cssd?

(6) $lly tɹUjjɹaɹy 7 tJ cWgG ,uzlhtJ cWgig tɹl ehdF klqF nghɹajhFk. tɹUjjɹaɹd 16 tJ cWgG 47 MFk. tɹUjjɹaɹd KjyhtJ cWgG› nghJ tɹjjɹahrk vdgdtwiwf fhzf.

(7) $lly tɹUjjɹaɹy 6 tJ cWgG KjyhtJ cWggɹd 3 klqF MFk. ,ttɹUjjɹaɹy 12 tJ cWgG 3 tJ cWggɹd %dW klqF vdf fhlLf

(8) n Mk cWgG (i) $5n+2$, (ii) $3n-8$ (iii) $7-2n$ MfTss $lly tUjjfs xtnthdwdJk Kjy %dW cWgGfis vOJf.

$lly ,il (Arethemetic mean)

a, b, c Mfa vzfs xU $lly tUjjay mikAk NghJ b MdJ a, c ,d $lly ,ilahFk.

x, y, z vdgit $lly tUjjnahdwd mLjjLjJss 3 cWgGffs Madõ y MdJ x ,wFk z ,wFk ,ilaYss $lly ,ilahFk.

x, y, z MdJ $lly tUjj vdwhy

$y - x = z - y$ (nghJ tjjahrk)

$2y = x + z$

$$y = \frac{x+z}{2}$$

$\therefore$ x" z ,wFk ,ilaYss $lly ,il $(y) = \frac{x+z}{2}$ MFk.

8, 16 ,y $lly ,il $= \frac{8+16}{2}$

$= 12$

$\therefore$ 8, 12, 16 xU $lly tUjjad mikAk.

cjhuzk-- 6

27 ,dJk 23 ,dJk ,ilaYss $lly ,iliaf fhZqfs.

$$\frac{27+23}{2} = \frac{50}{2}$$

$= 25$

cjhuzk-- 7

a, 3.9 ,d $lly ,il 2.7 MFk.

a lf fhZqfs.

$$\frac{a+3.9}{2} = 2.7$$

$a + 3.9 = 5.4$

$a = 5.4 - 3.9$

$a = 1.5$

3 ,wFk 13 ,wFk ,ilaiy $lly tiUjjiy mikaf$bathW 4 cWgGfis fhzf.

3, P, Q, R, S, 13 Maid $lly ,ilfs ehdFk P, Q, R, S MFk.

mtthwhaid› tiUjjiaid KjyhtJ cWgG 3 MFk. mjhtJ 6 MtJ cWgG 13 MFk.

vdNt $T_6 = 13$

$\therefore a + 5d = 13$

$3 + 5d = 13$

$5d = 13 - 3$

$5d = 10$

$d = 2$

,jdgb $p = 3 + 2 = 5$ $Q = 5 + 2 = 7$ $R = 7 + 2 = 9$ $S = 9 + 2 = 11$ MFk.

vdNt› 4 cWgGfSk 5, 7, 9, 11 MFk.

gawri 24'3

(1) gidtUtdtwwid $lly ,iliaf fhZqfs.

(i) 23 " 45 (ii) 2.5 " 3.5 (iii) 36 " 11

(iv) 14 " 24 (v) 18 " 12 (vi) 1.9 " 2.8

(vii) -42 " 18 (viii) $3x + 7$ " $x - 9$

(2) (i) x ,dJk 34 ,dJk $lly ,il 13 Maid› x If fhzf.

(ii) y ,dJk 12 ,dJk $lly ,il 15 Maid› y If fhzf.

(3) (i) 11 ,wFk 3 ,wFk ,ilaiy $lly tiUjjiy mikaf$ba 3 cWgGfis vOJf.

(ii) -4 ,wFk 11 ,wFk ,ilaiy $lly tiUjjiy mikaf$ba 4 cWgGfis vOJf.

(iii) a ,wFk 3b ,wFk ,ilaiy $lly tiUjjiy mikaf$ba 4 cWgGfis vOJf.

(vi) 3 ,wFk 23 ,wFk ,ilaiy $lly tiUjjiy mikaf$ba 4 cWgGfis vOJf.

(4) (i) ,uzL vzfsid ngUffk 84 MfTk $lly ,il 10 MfTk ,Ugid mttiU vzfisAk fhzf

(ii) ,uzL vzfsid ngUffk 90 MfTk $lly ,il $10\frac{1}{2}$ MfTk ,Ugid mttiU vzfSk ahit?

(5) ,U vzfsd $lly ,il $2\frac{1}{2}$ MFk. ,U vzfsdJk tjjahrk 1 MFk. ,ttU vzfSfFkila Yss tfjjijf fhzf.

$lly tUjj xdwd $lLjnjhifiaf fhzNghk.

1, 2, 3, 4, 5 ..... 50 tiuAss vzfsd $lLjnjhifiaf fhzNghk. ,J xU $lly tUjjahFk.

a = 1, d = 1, T_n myyJ $l = 50$
$T_n = a + (n - 1)d$
$50 = 1 + (n - 1)\,1$
$50 = 1 + n - 1$
$50 = n$

vyyh vzfsdJk $lLjnjhif S vDk Fwallhy fhllggLk.

$\therefore S = 1 + 2 + 3 + 4 \ldots\ldots\ldots 48 + 49 + 50$ (1)
$S = 50 + 49 + 48 + 47 + \ldots\ldots\ldots + 3 + 2 + 1$ (2)
vd vOj KbAk.

(1) + (2) lAk $lbdhy.
$\therefore 2S = (1 + 50) + (2 + 49) + (3 + 48) \ldots\ldots\ldots + (49 + 2) + (50 + 1)$
$2S = 51 + 51 + 51 \ldots\ldots\ldots\ldots 51 + 51$

51 ,d cWgGffs 50 cssd. (n = 50 vdTk&

$\therefore 2S = 51 \times 50$

$S = \frac{51 \times 50}{2} = 1275$

KjyhtJ cWgG a MfTk nghJ tjjahrk d MfTk cWgGfsd vzzpifin MfTKss $lly tUjjad filr cWgig l ,y fhlLNthk. cWgGffsd vzzpifin vdTk $lLj njhifia S_n vdTk vLgNghk. filr cWgG l Mad filr %dW cWgGfSk $l - 2d, l - d, l$ MFk.

$\therefore S_n = a + , (a + d) + (a + 2d) + (a + 3d) \ldots\ldots (l - 2d) + (l - d) + l \longrightarrow (1)$

$S_n = l + (l - d) + (l - 2d) + \ldots\ldots\ldots\ldots (a + 2d) + (a + d) + a \longrightarrow (2)$

(1) + (2) $2S_n = (a + l) + (a + l) + (a + l) \ldots\ldots\ldots\ldots (a + l) + (a + l)$

$(a + l)$,wF mika nvz z‰fifahd cWgGfs cssd.

$$2S_n = n(a + l)$$

$$\therefore S_n = \frac{n}{2}(a + l)$$ $lLjnjhifiaf fhzgjwfhd #jj‰ukhFk.

(,qF cWgGffs‰d vz z‰fif KjyhtJ cWgG› ,Wj‰ cWgG Mf‰atwiw khjj‰uk gadgLjJNthk.)

$l = T_n$

$T_n = a + (n - 1)$ dvdgjhy $l = a + (n - 1)$ dvd NkNy e‰Wtgg llJ. mjwfhf l ,wF rkdhd Nfhitia NkNy css #jj‰ujj‰y g‰uj‰aL nraNthk.

$$S_n = \frac{n}{2}\{a + a + (n - 1)d\}$$

$$S_n = \frac{n}{2}\{2a + (n - 1)d\}$$ $lly tUjj‰a‰d $lLj njhifiaf fhzgjwfhf ,dDnkhU #jj‰uk gadgLjjggLk. (,qF n- cWgGffs‰d vz z‰fif› a- KjyhtJ cWgG› d- nghJ tjj‰ahrk MFk.)

xU $lly tUjj‰a‰d KjyhtJ cWgG 12, nghJ tjj‰ahrk 3 MFk. Kjy 20 cWgGfs‰d $lLjnjhifiaf fhZqfs.

$a = 12,\ d = 3,\ n = 20$

$$\therefore S_n = \frac{n}{2}\{2a + (n - 1)d\}$$

$$S_{20} = \frac{20}{2}\{2 \times 12 + (19)3\}$$

$= 10\{24 + 57\}$

$= 10\{81\}$

$= 810$

cjhuzk9

12 cWgGffisf nfhzl $lly tUjjadd KjyhtJ cWgG 18, filr cWgG 62 MFk. tUjjadd $lLj njhifiaf fhzf

$n = 12,\ a = 18,\ l = 62$

$$S_n = \frac{n}{2}(a + l)$$

$$S_{12} = \frac{12}{2}(18 + 62)$$

$$= 6 \times 80$$

$$= \underline{480}$$

cjhuzk10

$lly tUjjnahdwd KjyhtJ cWgG 5, nghJ tjjahrk 7, filr cWgG 250 Mad› tUjjad $lLjnjhifiaf fhzf

KjyhtJ tUjjadd cWgGffsd vz zpfifiaf fhzNghk.

gbKiw 1

$$l = a + (n-1)d$$

$$250 = 5 + (n - 1)\ 7$$

$$250 = 5 + 7n - 7$$

$$250 = -2 + 7n$$

$$7n = 252$$

$$n = 36$$

gbKiw 11

$$S_n = \frac{n}{2}(a + l)$$

$$S_{36} = \frac{36}{2}(5 + 250)$$

$$= 18\ (255)$$

$$= \underline{4590}$$

cjhuzk11

10 ,wFk 100 ,wFk ,ilggllJk› kjadw 4 My tFgLk vzfsd $lLjnjhifiaf fhzNghk.

10 ,wF mLjjhfTss 4 My tFgLk vzfs 12, 16, 20 ..... MFk.

100 ,wF KddhYss 4 My tFgLk vz 96 MFk.

$\therefore a = 12,\ d = 4,\ l = 96$

(gbKiw 1) cWgGffsd vz zpfifiaf fhzNghk.

$l = a + (n - 1)\ d$

$96 = 12 + (n - 1)\ 4$

$96 = 12 + 4n - 4$

$96 = 8 + 4n$

$88 = 4n$

$22 = n$

cWgG 22 MFk.

gbKiw 11

$lLj njhifiaf fhzNghk.

$$S_n = \frac{n}{2}(a + l)$$

$$S_{22} = \frac{22}{2}(12 + 96)$$

$$= 11\ (108)$$

$lLjnjhif = $\underline{1188}$

cjhuzk 12

$lly tUjjnahdwy 6 tJ cWgG 13 MFk. 12 tJ cWgG -5; filr cWgG - 89 MFk. tUjjad $lLjnjhifiaf fhzf

$$a + 5d = 13 \longrightarrow (1)$$
$$a + 11d = -5 \longrightarrow (2)$$

(2) - (1) $6d = -18$

$d = -3$

d ,d ngWkhdjij (1) ,y gujaL nrajhy›

$$a + 5d = 13$$
$$a + 5 \times (-3) = 13$$
$$a - 15 = 13$$
$$a = 13 + 15 = 28$$

a = 28, d = -3, l = - 89 vdgjhy cWgGffsd vz zfif n lf fhzNghk.

$l = a + (n - 1) d$

$- 89 = 28 + (n - 1) (-3)$

$- 89 = 28 - 3n + 3$

$- 89 = 31 - 3n$

$-120 = -3n$

$n = 40$

$$\therefore S_n = \frac{n}{2}(a + l)$$

$$S_{40} = \frac{40}{2}[(28 + (-89)]$$
$$= 20(-61)$$
$$= -1220$$

cjhuzk 13

$lly tUjjnahdwd Kjyht J cWgG 7, filr cWgG 79 MFk. tUjjad $lLjnjhif 1075 Mad› mjd cWgGffsd vz zfif ahJ?

$$\therefore S_n = \frac{n}{2}(a + l)$$

$$1075 = \frac{n}{2}(7 + 79)$$

$$1075 = \frac{n}{2}(86)$$

$$1075 = 43n$$

$$n = \frac{1075}{43} = 25$$, t tUjjay 25 cWgGfs cssd.

(1) fNo juggl Lss $l l y tUj j fsd $l Ljnjh i f i af fhz f

(i) a = 8 , l = 68 n = 20

(ii) a = 25, l = 61 n = 24

(iii) a = -48 , l = 47 n = 20

(iv) a = 12 , d = 3, n = 20

(v) a = -15, d = 7, n = 16

(vi) a = 16, d = -5, n = 27

(2) fNo juggl Lss tUj j fsd J $l Ljnjh i f i af fhz f

(i) 2 , 4 , 6 , 8 ..... 100 c WgG f f sd

(ii) 3 , 5 , 7 , 9 , ... 40 c WgG f f sd

(iv) $\frac{1}{2}, \frac{3}{4}$,1..... ..... 24 c WgG f f sd

(v) (-14) , (-17) , (-20) '..... 15 c WgG f f sd

(vi) 2.4 , 3.6 , 4.8 ..... 35 c WgG f f sd

(3) gd tUk $l l y tUj j fsd $l Ljnjh i f i af fhz f

(i) a = 8 d = 4 l = 88

(ii) a = 36 d = -5 l = -74

(iii) a = 11 T_{10} = 74 n = 20

(iv) T_7 = 47 T_{12} = 82, n = 15

(v) a = -3 T_{18} = 99 l = 141

(vi) a = 12 T_{25} = 84 l= 159

(4) (i) 50 ,wFk 200 ,wFk , ilggll xwiw vzfsd $lLj njhifiaf fhzf

(ii) 500 ,Yk Fiwej 15 My tFfFk vzfsd $lLj njhifiaf fhzf

(iii) 5 ,wFk 100 ,wFk , ilggll 4 My tFfFkNghJ 2 kjahf tUk vzfsd $lLjnjhifiaf fhzf

(iv) n ,ulil vzfsd $lLjnjhifiaf fhzf

(5) (i) $lly tUjjnahdwy 2 tJ cWgG 3 MfTk 10 tJ cWgG 5 MfTk ,Uggd Kjy 22 cWgGfsd $lLjnjhifiaf fhzf

(ii) $lly tUjjnahdwy 2 tJ cWgG 4,6 tJ cWgG 24 MFk. 15 tJ cWgigAk Kjy 15 cWgGfsd $lLj njhifiaAk fhzf

(iii) $lly tUjjay Kjy 4 cWgGffsd $lLjnjhif Kjy 8 cWgGffsd $lLjnjhiffF rkdhFk. Kjy 3 cWgGffsd $lLjnjhif 27 MFk. KjyhtJ cWgigAk› nghJ tjjahrjijAk fhzf

(6) (i) $2,\ 3\frac{1}{2},\ 5,\ 6\frac{1}{2}$ vDk tUjjay KjyhtJ cWggy Mukgjj vjjid cWgGffisf $lbdhy $lLjnjhifahf 212 filfFk?

(ii) $lly tUjjay 5 tJ cWgG 3,9 tJ cWgG 8 vdd Kjy 20 cWgGffsd $lLjnjhifiaf fhzf

(iii) $lly tUjjay KjyhtJ cWgG 18, nghJ tjjahrk 5 MFk. $lLjnjhif 1310 MtjwF Kjy vjjid cWgGffis vLff Ntz Lk?

gawr 24'6

(1). ehkyhtd xtnthU gwej ehSfFk mtSila jeij gzk nfhLjJ tUfwhh. KjyhtJ gwej jddjjwF &gh 500 ck› ,uzlhtJ gwej jddjjwF &gh 600 ck› %dwhtJ gwej jddjjwF &gh 700 ck vdf nfhLjJ tejhy mtSfF 21 tUlqfshFk NghJ filfFk nkhjjg gzk vttsT?

(2) xUtd tqf‰f fzfnfhdiw Mukg‰jJ KjyhtJ khjk &gh 50 ck› ,uzlhtJ khjk &gh 100 ck %dwhtJ khjk &gh 150 ck vdw mbggila‰y Nrk‰gGffzff‰y itgGr nraf‰dwhd. xU tUlk fo‰ej g‰ddh mtd xtnthU khjKk &gh 500 tjk Nrk‰jjhd. 2 tUlqfs‰d g‰ddh mtDila Nrk‰gGf fzff‰y‰UfFk gzjnjhif ahJ?

(3) 14 kwwh eskhd fkg‰nahdW JzLfshf ntllgglJ. mtww‰d esqfs xU $lly t‰Ujj‰ xOqf‰y mikej‰Uejd. MffFiwej esk 25cm MFk. Mff $ba esk 45cm MFk. ntllggll fkg‰j JzLfs‰d vz z‰fif ahJ?

(4) Mfha t‰khdjj‰y‰UeJ ngh‰j‰nahdW trggLf‰dwJ. mJ xtnthU nrffDfFk t‰Ok J}ukhdJ Kjy t‰Oej J}ujj‰Yk 32 kwwh $bajhFk. KjyhtJ nrffd‰y t‰Oej J}uk 16 kwwh Ma‰d;

- 10 tJ nrffd‰y vttsT J}uk t‰Ok?
- 15 nrffdfs‰y t‰Oej J}uk vttsT?

rhuhkrk

★ KjyhtJ cWgG aMfTk nghJ t‰jj‰ahrkd MfTk css $lly t‰Ujj‰nahdw‰y n MtJ cWgig $T_n = a + (n-1)d$ vDk #jj‰uk %yk fhll KbAk.

★ x, y, z vdgd $lly t‰Ujj‰a‰y njhluhfTss %dW cWgGfsha‰d $y = \frac{x+z}{2}$ MFk. y MdJ x, z ,d $lly‰il vdggLk.

★ $lly t‰Ujj‰nahdw‰y $lLjnjhifiaf fhzgjwF $S_n = \frac{n}{2}(a+l)$ "$S = \frac{n}{2}\{2a+(n-1)d\}$ vDk #jj‰uqfs gadgLjjggLk.