

I yimawlan-iw
Eabdennur At Yehya d
Zbida At Eamer
D yideggalen-iw
Buxalfa At Iken d
Hura At Yehya
Yas ruhen,
Taqbaylit-nsen mazal itt ...

I wid akk i ruhen deg unebdu-nni 2021.

Izmamen n tusnakin
Azmam wis sin
n yimḍanen

Sabiḥ AT YEḤYA

Izmamen n tusnakin

Azmam wis
2
n yimḍanen

Editions Identité

Tizrigin Tamagit



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ASNEMMER

Ad rrey tajmilt ɣas akka meɕtuhet i wid id-ineğren abrid n tusnakt s teqbaylit Mass Ramdane ACHAB, Mass Mohand Laïhem d Mass Hend Sadi.

Ad snemmrey Mass Kamal Bouamara id-ifkan afus yal tikkelt. Di leɛmeɣ i d-inni ala ɣas akken ur istufa ara.

Ad snemmrey Mass Ahmed Nekkar iqeblen a d-isufey idlisen-a mebla akukru ɣas akken d leqdic amaynut.

Di taggara, ad snemmrey akk imdukkal imeynasen n yidles amaziɣ id-ifkan afud igerrzen gar-asen imdukkal n tiddukla INAS d terbaɛt n BERBANYA.

Awal aneggaru yef usalel n twacult-iw, tamettut-iw Fazya akked yelli Silina.

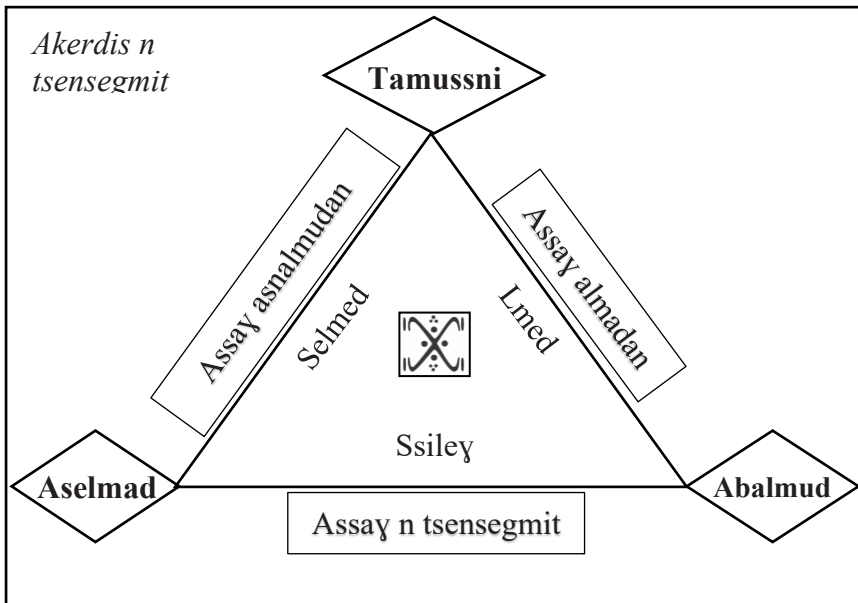
TAZWART

Deg uzam-a wis sin a nkemmel abrid i d-newwi yef yimɗanen: deg sin waxfiwen a d-nawi yef yimɗanen imrawanen akked yifmiɗiyen, acku deg uzam-a a neɓdu s taljibrit, s yiwen n yixef yef isurta.

Byiy dayen a d-awiy cwiɗ n wawal yef tsensegmit (tapidagujit) imi d nettat i yellan ger uselmad d unelmad. Nezmer a d-nini: d abrid i tettawi tamussni akken ad truɥ syur uselmad yer unelmad. D ayen dayen i isemgaraden ussnan d uselmad. I sin d ussnanen acu kan yella yiwen yessen amek ara issiweɗ tamussni i ugrud ney i wumdan.

Tasuqqilt yer teqbaylit n tussna i neɓya a nesselmed i ugrud ilaq ad tili deg-s tmuyli i ilqayen: ilaq ad tili s tmuyli n tsensegmit (tapidagujit).

A-tt-an tsuqqilt n *triangle pédagogique*: akerdis n tsensegmit, ara d-isbanen amek ilaq ad ilɥu uselmed i ugrud deg uyerbaz.



Ixef amenzu: ISURTA

TAMSIRT

1. TAZWART

1.1. Tarusi:

Asartu n yimḍanen am twacult n yimḍanen anda yal amḍan amecṭuḥ yeḍfer ameqqran fell-as, ney anda yal amḍan ameqqran yeḍfer amecṭuḥ fell-as. Yal amḍan neqqar-as aḥwil n usartu. Amkan i yetṭef yal aḥwil deg usartu neqqar-as adar.

Amedya:

Asartu amenzu: 1, 3, 5, 7, 9, 11, 13 ...

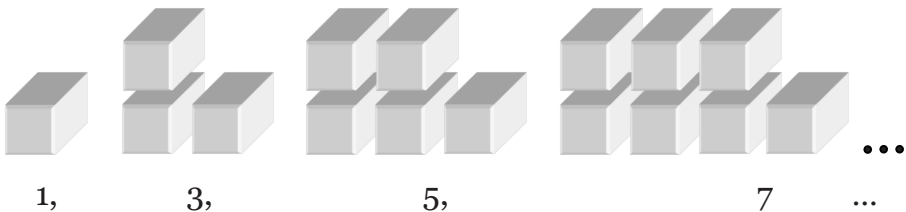
aḥwil amenzu
aḥwil wis ṣa

aḥwil wis sin

Asartu wis sin: 10, 8, 6, 4, 2, 0, -2, -4 ...

Tikwal nesseqdac tugniwin di kra n yisurta.

Amedya: Asartu n yigasasen



1.2. Tafelwit tumḍint:

Nesseqdac tafelwit tumḍint i wakken a d-nesbin amkan n yal aḥwil deg usartu.

Amedya:

Aru asartu-ya s tfelwit tumḍint: 1, 4, 7, 10, 13 ...

Adar	1	2	3	4	5	...	n
Aḥwil	1	4	7	10	13	...	

Adar n usartu: d amḍan ummid agmawī ara d-yefken amkan n yal aḥwil deg usartu: amenzu, wis sin, wis kṛaḍ ... D asekkil **n** id azamul n udar ($n \in \mathbb{N}$).

Aḥwil n usartu: d yal amḍan n usartu. D asekkil **U** id azamul n uḥwil ($U \in \mathbb{Q}$).


2. TILLUGNA


D ayen i nxeddem i uḥwil amenzu akken a d-naf aḥwil wis sin, ney i uḥwil wis sin akken a d-naf aḥwil wis kṛaḍ ...


Imedyaten:


1)

Adar	1	2	3	4	5	...	n
Aḥwil	1	6	11	16	21	...	


+5


+5


+5


+5


Tillugna = +5


Nezmer ad naru s wawalen asartu-ya:


Asartu ibeddu s umḍan yiwen (1), tillugna-s d timernit n semmus (+5).


2)

Adar	1	2	3	4	5	...	n
Aḥwil	10	7	4	1	-2	...	


-3


-3


-3


-3

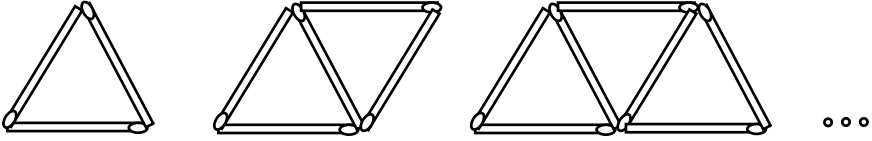
Tillugna = -3

Asartu ibeddu s 10, tillugna-s d tukksa n kṛaḍ (-3).

3. ALUGEN

Alugen n usartu d assay i yellan ger uḥwil d udar. S ulugen ad tili tuqqna n uḥwil yer udar-is. D ayen i ilaqen ad txedmeḍ i udar akken a d-tafed aḥwil. Ad tafed alugen n usartu akken i d-yella deg yimediyaten-a.

Amedya 1^u: Asartu n tterqacin



Adar		1	2	3	4	5	...	n
Aḥwil		3	5	7	9	11	...	

Tillugna = +2

Akken a d-naf alugen, issefk a d-naf aḥwil n udar = 0.

Adar	0	1	2	3	4	5	...	n
Aḥwil	1	3	5	7	9	11	...	

Alugen = tillugna \times n + U_o

U_o : d aḥwil n udar o.

Alugen = $2 \times n + 1 = 2n + 1$

Amedya wis 2: af-d alugen n usartu {1, 4, 7, 10, ...}.

Adar	0	1	2	3	4	5	...	n
Aḥwil	-2	1	4	7	10	14	...	

Tillugna: +3

$$U_0 = 1 - 3 = -2$$

$$\text{Alugen} = 3 \times n + -2 = 3n - 2$$

$$\text{Nezmer a naru } U_n = 3n - 2$$

4. ASİDEN N UḤWIL S ULUGEN

Nettnadi yef ulugen n usartu i wakken a d-naf aḥwil i nebya mebla ma nessen akk iḥwilen imenza.

Amedya: af-d aḥwil wis 100 n usartu-ya $\{1, 4, 7, 10, \dots\}$.

Alugen n usartu-ya d: $U_n = 3n - 2$.

$$\text{Ihi, aḥwil wis } 100 = 3 \times 100 - 2 = 298$$

$$\text{Ney } U_{100} = 298.$$

5. ASİDEN N UDAR S ULUGEN

S leqdic n ulugen n usartu, nezmer a d-naf adar n uḥwil.

Amedya: Af-d adar n uḥwil = 35 n usartu $\{3, 5, 7, 9, \dots\}$

Alugen n usartu-ya d $U_n = 2n + 1$.

$$\text{A naru ihi, tagda } 2n + 1 = 35$$

A nseqdec tarrayt n temhalin timiṭṭiyin akken a d-naf azal n n .

$$2n + 1 = 35$$

$$35 - 1 = 34$$

$$34 \div 2 = 17$$

$$n = 17, \text{ ihi } 35 \text{ d azal n uḥwil wis } 17 \text{ ney } U_{17} = 35.$$