



# Helu Kokua A'o

## Welcome to the Wonderful World of Learn & Teach

'O ke 'ano o ke a'o 'ana 'o 'A'o a A'o! E a'o i ke ola a pau!

<sup>st</sup>1 E a'o, i ka ho'omaopopo 'ana, e ho'omaka i ke a'o 'ana. Ma ka ho'ona'auao manuahi wikiwiki a'o nā haumāna i nā haumāna lohi. Ma ka hana, ho'oma'ama'a ka limahana akamai i nā mea hou. Ma ka home, a'o nā kūpuna i nā keiki, nā mo'opuna. A'o nā mākuā i nā keiki.

'Ōlelo A'o No ke a'o 'ana a a'o 'ana 'a'ole wale e noi'i i kēia alaka'i akā i nā 'ano 'ē a'e. I ka loa'a 'ana o kahi 'āpana kākau maika'i Plagiarize 'āpana āu e pono ai a ho'onui i kēia mau mea (pili i nā Scholars and Educators).



Holo: nānā 'ōlelo a me ka nānā 'ōlelo.  
Ho'ohui: pono ke kala, nā ki'i a me nā leo.  
Heluhelu hō'ōia, inā pono e ho'ololi.  
Hana i kāu hana 'kuleana kope' a laila ho'olaha.

Nā helu papa kuhikuhi E ho'ohui i ka  
papa ~ Helu ~ Helu mana'o ~ Helu-helu kilokilo ~ Ho'ohana helu ~ Helu helu  
~ Nā hō'ailona math ~ Ana ~



## 1 Ke kali nei ke Akua e lohe mai ia oe !

Ho'olaule'a ka pule ho'ona'auao i ka lā ho'ona'auao 6.1.7. NAtm Dear 1 God, Creator of the most beautiful Universe Kou kahu malama pono haahaa loa (1 Promises to seek, gain, apply Knowledge all life long To <sup>St</sup> inoa) Learn and Teach via Free Education E kākō'o i ka lehulehu Free Education Pass on Life Experiences to next generation For ka nani o 1 KE AKUA a me ka pono o ke kanaka Ho'ohana 'ia kēia pule ma ka papa a ma ka lā ho'ona'auao



## Pāku'i papa'aina

Aia i ka papa ho'ohui 400 mea ho'ohui. Ke hele nei mai ka hema a i ka 'ākau ma kēlā me kēia lālani, a mai luna a lalo i kekahi kolamu, 'oi aku kēlā me kēia helu hou i 1 (+) ma mua o ka helu mua (ka mea hope). He pū'ulu helu ka po'e hope e la'a 0, 1, 2, 3, 4, 5, ... 'O nā pahu i uhi 'ia he mau huahelu 'elua o nā huahelu eg  $2+2=4$

+	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

'A'ole i ho'okomo 'ia 'o O (zero) ; ho'ohui 'O (zero) i kekahi huahelu e hopena i ka helu like. E koho i kahi helu (helu) ma ka laina ho'opa'a luna; e ho'ohui (+) me kahi helu ma ka laina kū pololei hema loa. E ne'e 'ākau ma kēia laina kūpa'a a hiki i ka laina ākea kūpono. E la'a me  $3+5=8$  Nānā: Ua like ka hopena o  $3+5$  me  $5+3=8$  Hiki ke ho'ololi i nā mea ho'ohui.

## Heluhelu

He mea nui ka helu a he akua ka 7 !

I ka manawa i ho'omaka ai ke kanaka e ho'ohana i nā helu, ua mākaukau 'o ia e ulu i kāna Destiny: Custodian of the Physical Universe. Nā helu i hana 'ia hiki ke wehewehe a ana i ka nui, ka wikiwiki,..., ka hana 'ana i nā mana'o makemakika. Mana'o nā kahu mālama 'o nā helu he pōhaku kumu nui o ka na'auao o ke kanaka.

'O nā helu ka mana'o makemakika kumu o ke kanaka ho'ohana no ka hana 'ana i nā mana'o makemakika. Ua alaka'i 'ia nā helu i ka 'epekema e hiki ai iā mākou ke holomua a ho'omaopopo i nā mea a ke Akua i hana ai. Ua kūkulu 'o Numbers i nā mo'omeheu a luku iā lākou. Ka pō'aiapuni o "Ho'omaka, Ho'opau a me Recycling".

'Ae 'ia nā helu helu:

Nā manamana lima ma ka lima 1, 2, 3, 4, 5. Ka hopena (hō'ailona: =) 5 manamana.

'O ka ho'ohui 'ana (hō'ailona: +) hiki ke ho'ohui 'ia ma mua o 1 mau hopena helu. Nā manamana lima ma nā lima 'elua  $5+5 = 10$  manamana ma nā lima 'elua.

Lawe 'ia (hō'ailona: -) hiki ke hō'emi i kahi hopena mua. 1 lima me Ua 'oki 'ia nā manamana lima 5 (pō'ino):  $5-1 = 4$  mau manamana lima i koe ma ka lima.

'O ka ho'onui 'ana (hō'ailona: •) hiki ke helu (ma'alahi) i nā helu like mau mea. Nā manamana lima ma 3 lima  $3 \cdot 5$  ('oi aku ka ma'alahi ma mua o  $5+5+5$ ) = 15 manamana lima ma 3 lima. Ke ho'onui pinepine i ka helu like, ho'ohana 'ia kahi kaha no'ono'o:  $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$  (2<sup>5</sup> mana o 5) = 32 ka mana lima o 2.

Hiki i nā helu ke hana i kahi Ka'ina o nā helu, 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, ... (hō'ailona: ...) ma hope o 2 helu mua, 'O kēlā me kēia helu ka huina o nā helu 2 ma mua.

Ho'ohana ka Luna kia'i i ka 'ōnaehana helu kūlohelohe kumu 10. 'O nā hō'ailona 1 digit i ho'ohana 'ia: 0 (zero), 1 (ho'okahi), 2 ('elua), 3 ('ekolu), 4 ('ehā), 5 ('elima), 6 ('eono), 7 ('ehiku), 8 ('ewalu), 9 ('eiwa). Helu : 0, 2, 4, 6, 8 pono; 1, 3, 5, 7, 9 ua kapaia he odd. Ma hope o 9, ho'ohana 'ia nā huahelu 2 (i kapa 'ia he 10) : 10, 11, 12, 13, 14, 15, 16, 17, 18, 19.

'O ka 0 i kau 'ia ma ka 'ākau o kekahi o nā helu 9 e hana i ka helu helu 2 i kapa 'ia 'o 10's ('umi's), la'a 70. Ua kapa 'ia 'elua 00 he 100's (haneri's), la'a 700. 'Ekolu 000 i kapa 'ia he 1000 (mau kaukani), la'a 7000. 'O kēlā me kēia 3 Ua ho'oka'awale 'ia nā helu i helu 'ia mai ka 'ākau mai e kahi koma eg 1,000,000 (1 miliona).

'O ka pākēneka (hō'ailona: %) ke 'ano he mau haneli. Hiki ke hō'ike 'ia ka hakina 100 ma ke 'ano he pākēneka e la'a  $7/100 = 7%$  a i 'ole decimal 0.07 (.)

Ho'ohana 'ia kahi kiko e hō'ike i nā koina ma lalo o 1 e la'a me 0.1 (i kapa 'ia 'o Decimal). Hiki ke hō'ike 'ia ka 0.1 (Decimal) ma ke 'ano he hakina me ka ho'ohana 'ana i ka hō'ailona mahele  $1/10$  0.1 =  $1/10$  a i 'ole pākēneka

10% Ho'ohana 'ia nā helu ma ka ho'olālā geometric: Triangle 'ao'ao 3, 'ao'ao 4 Rectangular, Square, 5 'ao'ao. Pentagon, 6 'ao'ao Hexagon, 7 'ao'ao Hepta-gon (hō'ailona o 1 FAITH), 8 'ao'ao Octagon. Pāha<sup>2</sup> (2 mana), Cube<sup>3</sup> (3 mana'o), Cone, Cylinder...



He akua ka 7 no ka mea, ua lawe 'o 1 GOD 7 lā \* no ka hana 'ana i ke Kino Uni-verse a me ke Kanaka. 6 lā hana + 1 lā ho'omaha = 1 pule.

\*Meka! 1 He 'oko'a ka pule a ke Akua mai ka pule CG Kalender.

Lā 1            La 2 midweek La 4                            Lā 5 hopena pule Le'ale'a-lā

1 Makemake ke Akua i 7 Lahui. Ma muli o 7 mau 'āpana ~ 1

FAITH ma muli o 7 'ōwili ~ hō'ailona: Heptagon (7 'ao'ao, 7 kihi)

1 Church: Universe Custodian Guardians he 7 kū'oko'a aupuni panalā'au (Orackle)~

7 Evils are human Failings, the 'Chain of Evil'

has 7 links ~ 7\_7 Rule: a committee of equal representation 7 HE a me 7

SHE ~ Numbers meaning 0 Out of aohe mea 1 hana ke Akua i ke ao kino. 'O Zero

ka helu o ka hana. Negative: 'O

Zero ka helu o ka luku.

1 'O ka ho'omaka, 'o ia ka mua, 'o ka 1 a wale nō. 1 KE AKUA 1 MANAOIO 1 Ekalesia.

Negative: 'O ka hopena, 'o ia ka hope, endangered. 'O ka nui.

2 Harmony, Ka mare hemolele, ka mare, na mahoe.

Negative: Anarchy, separating, pornography, celibacy.

3 Huinakolu manawa, 3 kia hoomana (1 GOD 1 FAITH 1 Church).

Negative: 3 he lehulehu, ho'omana, olai. 4 4 kau (ke

puna, ke kauwela, ke kau, ka hooilo) o ka makahiki, quattro

makahiki, 4 kuhikuhi (akau, hikina, komohana, hema), 4 mau mea (ahi, wai, honua,

ea), huinahālike, cube, na rula i kukuluia. Negative: chaos, huikau 'a'ohe lula, nele i ka pili, ke kāmāwai o Murphy.

5 Hio, paionia, hoomau, hana.

Negative: pale, ka'ahele, mana'o'ole.

6 Pū'ulu, kaiaulu, kaulike pilikanaka, kia'i kaiāulu, hale pule.

Negative: Hermit, ka'awale, elitist, waiwai apartheid, nā hui.

7 1 'O ka 'ōlelo hou a ke Akua 'o ke kāmāwai Hā'awi Hō'ike, No'ono'o, IP (waiwai na'auao), wānana. 'A'ohe: No'ono'o, mana'o mana'o, nā leka ho'opunipuni, kope kope, patent.

8 Pono, ala 'oihana, kuleana, hilina'i. 'ino: Lawlessness, nele i ka hana, makua ole, hewa, wahahee.

9 Pilikanaka, 'oli'oli, aloha, kama'ilio lehulehu. 'ino: Loner, huhu, olelo ole.

## 1 Ke kali nei ke Akua e lohe mai ia oe !

Pule Helu Aloha 1 ke Akua,

Oka 1 hooiaio 6 LGM

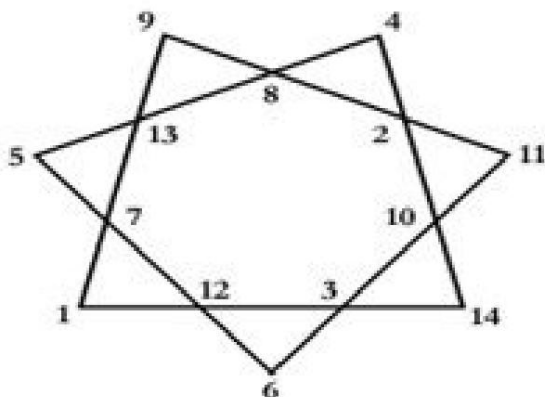
ka mea nana i hana i ka honua nani loa Kou kahu malama pono haahaa loa (1 Mahalo iā 'oe no nā helu Helu kōkua iā <sup>St</sup> inoa) mākou e ho'omaopopo i nā

helu o ke ao holo'oko'a e kōkua ai i nā kuleana kahu kia'i Nā helu no ka ho'oulu 'ana a me ka le'ale'a no ka nani o 1 ke Akua. a me ka pono o ke kanaka Hoohanaia

keia pule i ka wa e pono ai !



## Helu kupua



Ho'okomo 'ia nā helu Heptagram Magic ma kēlā me kēia o nā vertices a me nā 'āpana i hiki i nā helu 4 ma kēlā me kēia laina ke helu 30 !



E hana i ka hōkū lā heptagon kilokilo 7?

'O ka le'ale'a i nā square magic ka 'oia'io i kēlā me kēia ala e helu ai  
Ho'ohui 'ia kahi huinaha: ma ke kū pololei (v), ma ke alo (h) a i 'ole ka diagonal (d)  
ua like ka hopena.

## Magic squares

Nā huinahā kilokilo me nā helu 9, 16, 25

Magic Squares				v34	v34	v34	v34	d34
v15	v15	v15	d15	16	3	2	13	h34
8	1	6	h15	5	10	11	8	h34
3	5	7	h15	9	6	7	12	h34
4	9	2	h15	4	15	14	1	h34
d15				4 corners = 34				d34
v65	v65	v65	v65	v65	d65			
11	24	7	20	3	h65			
4	12	25	8	16	h65			
17	5	13	21	9	h65			
10	18	1	14	22	h65			
23	6	19	2	15	h65			
4 corners + middle = 65					d65			

E hana i kahi huinahā 49?

## Challenge

### Ho'ohana helu

**A:** Aia nā helu 'ē a'e he 1, 3, 5, 7, 9, a me nā helu a pau nona ka eli hope'ō ia kekahi o kēia.

**B:** Aia nā helu like me 0, 2, 4, 6, 8, a me nā helu hope loa helu kekahi o ia mau mea.

**C:** Loa'a nā helu holo'oko'a i nā helu 'oko'a a me nā helu like.

**D:** He 'ōnaehana helu kumu 2 nā helu binary me ka ho'ohana 'ana i nā hō'ailona 2, 0, 1.

**E:** Pākēneka (%) no ka loa'a 'ana o 15 % o ka 50 e ho'onui i ka % a me ka pu'unaue helu me 100 = 7.5!  $15 \cdot 50 : 100 = 7.5$

E wehewehe i ka % hā'awi 'ia ma ke 'ano he hakina, e ho'onui i ka  $15 \cdot 100 / 100 = 15$

E hō'ike i ka % i hā'awi 'ia ma ke 'ano decimal, e ho'onui i ka  $0.15 \cdot 100 = 15$

**F:** Pono ka hakina 3 no ka hoohuli ana i ka 15 % i ka hakina ma'amau  $3 / 20 : 1$ . e haalele i ka hoailona %. 2. puunaue i  $100 \cdot 15 / 100$ . 3. hoemi

i nā hua'ōlelo ha'aha'a \_ 3 / 20 .

**G:** Ho'ololi 'o Decimal i 15% i decimal. Ha'alele i ka hō'ailona %. A laila, ho'one'e i ka helu decimal o ka % 'elua mau wahi i ka

**hema = 0.15 H:** Nature sequence numbers e 'ae i ka hana 'ana i ke ka'ina o nā helu e la'a 0, 1, 1, 2, 3 ... ma hope o 2 mau helu mua, 'o kēlā me kēia helu ka huina o na helu 2 mua.

**I:** Nā huahelu prime , loa'a iā lākou (nā helu holo'oko'a i pu'unaue 'ia e lākou iho) Eg e huli i nā helu prima a pau i ka 20. E papa inoa i nā helu a pau mai ka 2 a hiki i ka 20. Hō'ike i ka 2 e ha'alele i nā huina a pau o 2. E hō'ailona i ka helu a'e (3) 'a'ole. i hō'ike 'ia i ka mālama 'ole 'ana i kāna mau mea he nui. E hana hou a hiki i ka hopena o ka papa inoa. 'O nā primes nā helu i hō'ike 'ia. 2,3,5,7, 11, 13,17, 19,

**J:** Ho'okumu 'ia nā helu Roma ma kekahi mau huapalapala o ka pī'āpā i hui 'ia e hō'ike i ka huina a 'oko'a paha o ko lākou mau waiwai.

1 I , 2 II, 3 III, 4 IV, 5 V, 6 VI, 7 VII, 8 VIII, 9 IX, 10 X, 11 XI, 12 XII,....

20 XX, 30 XXX, 45 XLV, 50 L, 76 LXXVI, 100 C, 500 D, 1000 M.

## Waiwai helu

0 > Zero

1 > Hookahi

5 > Elima

7 > Ehiku

10 > umi

50 > Kanalima

100 > Haneri

500 > Elima haneri

1,000 > Tausani

5,000 > Elima tausani

10,000 > umi tausani

50,000 > Kanalima tausani

100,000 > Haneri tausani

500,000 > Elima haneri tausani

1,000,000 > Miliona

10,000,000, > umi miliona

100,000,000 > Haneri miliona

1,000,000,000 > Miliard

10,000,000,000 > 'umi miliona

100,000,000,000 > Haneri miliona

1,000,000,000,000 > Piona  
10,000,000,000,000 > 'umi piona  
100,000,000,000,000 > Haneri piona  
1,000,000,000,000,000 > Triliona  
10,000,000,000,000,000 > 'umi trillion  
100,000,000,000,000,000 > Haneri trillion  
1,000,000,000,000,000,000 > Zillion  
10,000,000,000,000,000,000 > 'umi zillion  
100,000,000,000,000,000,000 > Haneri zillion

Hoomaopopo ! Mai ka 'ākau a i ka hema, kau 'ia kahi koma ma hope o kēlā me kēia 3<sup>rd</sup> huahelu.

# Mathematical symbols

= hopena like me

'āole like me

like like me

+ ho'ohui i nā hui 'oi aku ma mua o 1 mau hopena helu

- ho'emi ka lawe 'ana i kahi hopena mua

± ho'onui a hō'emi paha

hō'emi a ho'ohui paha

• a i 'ole x ka ho'onui 'ana (ma'alahi) ka helu 'ana i nā huina like mau mea

÷ ka puunaue ana i ka mahele o ka hopena mua

> 'oi aku ma mua

< emi iho

o like a 'oi aku paha ma

like a emi mai paha

✳ mua o ka %

✳ aole emi mai

̣ pākēneka

‰ permil

ua like me ka

ua like ia me

Ω Omega, ka huina o na hoonui kumu kumu a pau

pili i ka π Pi, hua

Delta, 'oko'a

o kumu

Sigma, huina o

huinahalike [ ]

{ } nā pale lima, ka ho'onohonoho hakahaka

mau pale huinahalike

, } ho'onohonoho o (specify)

( ) pale.

{ {...} a pēlā aku, ho'onohonoho palena 'ole

nolaila

no ka mea, mai





'āpana	ho'onohonoho nui
mea o	'a'ole mea o
∅ ho'onohonoho	U ho'onohonoho honua
hakahaka	ho'ohui hui pū 'ia
integral	ho'ohui pālua
hui pū 'ekolu	ho'ohui i ka leo pani



## Nā ana

Ho'ohana ka Luna kia'i i nā kūlana Makahiki Hou (NAs) e ana. He mana metric hou. He lawelawe kaiāulu UCG.

Ka lō'ihi kumu : mika (m) ~

'Āpana kumu 'āpana : mika square-mika ( $m^2$ ) ~ 3 D mika ( $m^3$ ) ~

Puke kumu Volume : lita (l) ~

Kaumaha kumu 'āpana: gram (g)

Ana prefix. E ho'ohana i nā prefix i ka nui no nā mana maika'i.

Mana Hoailona Prefix [ ] Waiwai

Yotta Y  $10^{24}$  1,000,000,000,000,000,000,000,000

Zetta Z  $10^{21}$  1,000,000,000,000,000,000,000

Exa E Peta  $10^{18}$  1,000,000,000,000,000,000

$10^{15}$  1,000,000,000,000,000

Tera T  $10^{12}$  1,000,000,000,000

Giga G  $10^9$  1,000,000,000

Mega M  $10^6$  1,000,000

Myria Ko'u  $10^4$  10,000

Kilo K  $10^3$  1,000

Hecto H  $10^2$  100

Deka D  $10^0$  10

kumu b deci  $10^{-1}$  1

keneta  $10^{-2}$  0.01 0.1

c

mili m  $10^{-3}$  0.001

micro  $\mu$   $10^{-6}$  0.000,001

nano n	10 [-9]	0.000,000,001
pico p femto f	10 [-12]	0.000,000,000,001
atto zepto z	10 [-15]	0.000,000,000,000,001
yocto a	10 [-18]	0.000,000,000,000,000,001
y Length Base	10 [-21]	0.000,000,000,000,000,000,001
unit: mika (m)	10 [-24]	0.000,000,000,000,000,000,000,001

~ līlīlī hua prefixes he ( ) waiwai o

kumu. [0] Hō'ike nā pale i ka waiwai o ka mana. Ka mamao ma waena o 2 helu. Eg  
0..ā..10 = 10

#### Mana Hoailona Prefix [ ] Waiwai

1 Yotta Ym	10 [24]	1,000,000,000,000,000,000,000,000
1 Zetta Zm	10 [21]	1,000,000,000,000,000,000,000,000
1 Exa Em	10 [18]	1,000,000,000,000,000,000,000
1 Peta Pm	10 [15]	1,000,000,000,000,000,000
1 Tera Tm	10 [12]	1,000,000,000,000,000
1 Giga Gm	10 [9]	1,000,000,000
1 Mega Mm	10 [6]	1,000,000
1 Myria Mym	10 [4]	10,000
1 Kilo Km	10 [3]	1,000
1 Hecto Hm	10 [2]	100
1 Dekka Dm	10 [1]	1 mika m 10 10
[0] 1 deci dm	10 [-1]	1 keneta 1
knm	10 [-2]	0.01 0.1

1 mili mm	10 [-3]	0.001
1 micro μm	10 [-6]	0.000,001
1 nano nm	10 [-9]	0.000,000,001
1 pico pm	10 [-12]	0.000,000,000,001
1 femto fm	10 [-15]	0.000,000,000,000,001
1 ma ka hola	10 [-18]	0.000,000,000,000,000,001
1 zepto zm	10 [-21]	0.000,000,000,000,000,000,001
1 yocto ym	10 [-24]	0.000,000,000,000,000,000,000,001

'āpana mika pāha'i : mika (m<sup>2</sup>) ~ nā prefix hua līlīlī he ( ) waiwai o

kumu. [0] Hō'ike nā pale i ka waiwai o ka mana. Ka laula, ka laula o kahi wahi i hoonuiia  
. Eg 10 • 10 = 100 m<sup>2</sup>

#### Mana Hoailona Prefix [ ] Waiwai

1 Yotta Ym <sup>2</sup>	10 [24]	1,000,000,000,000,000,000,000,000
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1 Zetta  $Zm^2$   $10^{21}$  1,000,000,000,000,000,000,000

1 Exa  $Em^2$   $10^{18}$  1,000,000,000,000,000,000

1 Peta  $Pm^2$   $10^{15}$  1,000,000,000,000,000

1 Tera  $Tm^2$   $10^{12}$  1,000,000,000,000

1 Giga  $Gm^2$   $10^9$  1,000,000,000

1 Mega  $Mm^2$   $10^6$  1,000,000

1 Myria  $Mym^2$   $10^4$  10,000

1 Kilo  $Km^2$   $10^3$  1,000

1 Hecto  $Hm^2$   $10^2$  100

1 Dekka  $Dm^2$   $10^1$  1 mika  $m^2$   $10^0$

[0] 1 deci  $dm^2$   $10^{-1}$  1 keneta  $10^0$

$cm^2$   $10^{-2}$  0.01  $10^0$  0.1

1 mili  $mm^2$   $10^{-3}$  0.001

1 micro  $\mu m^2$   $10^{-6}$  0.000,001

1 nano  $nm^2$   $10^{-9}$  0.000,000,001

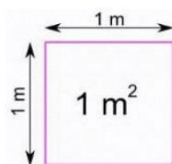
1 pico  $pm^2$   $10^{-12}$  0.000,000,000,001

1 femto  $fm^2$   $10^{-15}$  0.000,000,000,000,001

1 mai  $am^2$   $10^{-18}$  0.000,000,000,000,000,001

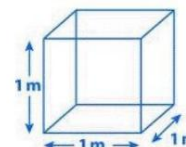
1 zepto  $zm^2$   $10^{-21}$  0.000,000,000,000,000,000,001

1 yocto  $ym^2$   $10^{-24}$  0.000,000,000,000,000,000,000,001



huinaha  
mika  
( $m^2$ )

Cubic  
mika  
( $m^3$ )



'Āpana mika kubiko : mika ( $m^3$ ) ~ hua mua hua līlī'i he ( ) waiwai o

kumu. [0] Hō'ike nā pale i ka waiwai o ka mana. Ka laula, ka laula, ka hohonu o kahi wahi māhuahua . Eg  $10 \cdot 10 \cdot 10 = 1000 m^3$

Mana Hoailona Prefix [ ] Waiwai

1 Yotta  $Ym^3$   $10^{24}$  1,000,000,000,000,000,000,000,000

1 Zetta  $Zm^3$   $10^{21}$  1,000,000,000,000,000,000,000

1 Exa  $Em^3$   $10^{18}$  1,000,000,000,000,000,000

1 Peta  $Pm^3$   $10^{15}$  1,000,000,000,000,000

1 Tera  $Tm^3$   $10^{12}$  1,000,000,000,000

1 Giga  $Gm^3$   $10^9$  1,000,000,000

1 Mega  $Mm^3$   $10^6$  1,000,000

1 Myria  $Mym^3$   $10^4$  10,000

1 Kilo  $Km^3$   $10^3$  1,000

1 Hecto $\text{Hm}^3$ $10$ [2]	100
1 Deka $\text{Dm}^3$ $10$ [1] 1 mika $\text{m}^3$	10
$10$ [0] 1 deci $\text{dm}^3$ $10$ [-1] 1	1
keneta $\text{cm}^3$ $10$ [-2] 0.01	0.1

1 mili $\text{mm}^3$ $10$ [-3] 0.001	
1 micro $\mu\text{m}^3$ $10$ [-6] 0.000,001	
1 nano $\text{nm}^3$ $10$ [-9] 0.000,000,001	
1 pico $\text{pm}^3$ $10$ [-12] 0.000,000,000,001	
1 femto $\text{fm}^3$ $10$ [-15] 0.000,000,000,000,001	
1 mai $\text{am}^3$ $10$ [-18] 0.000,000,000,000,000,001	
1 zepto $\text{zm}^3$ $10$ [-21] 0.000,000,000,000,000,000,001	
yocto $\text{ym}^3$ $10$ [-24] 0.000,000,000,000,000,000,000,001	

Volume Base unit: lita (l) ~ lili'i hua prefix he ( ) waiwai o ke kumu.

[0] Hō'ike nā pale i ka waiwai o ka mana. Volume ma waena o 2 ana. Eg 0..ā..10 = 10

Mana Hoailona Prefix [ ] Waiwai

1 Yotta $\text{Yl}$ $10$ [24] 1,000,000,000,000,000,000,000,000	
1 Zetta $\text{Zl}$ $10$ [21] 1,000,000,000,000,000,000,000,000	
1 Exa $\text{El}$ $10$ [18] 1,000,000,000,000,000,000,000	
1 Peta $\text{Pl}$ $10$ [15] 1,000,000,000,000,000,000	
1 Tera $\text{Tl}$ $10$ [12] 1,000,000,000,000	
1 Giga $\text{Gl}$ $10$ [9] 1,000,000,000	
1 Mega $\text{Ml}$ $10$ [6] 1,000,000	
1 Myria $\text{Myl}$ $10$ [4] 10,000	
1 Kilo $\text{Kl}$ $10$ [3] 1,000	
1 Hecto $\text{Hl}$ $10$ [2] 100	
1 Deka $\text{Dl}$ $10$ [1] 1 lita $10$ [0] 10	
$10$ [-1] $10$ [-2] 0.01	1
1 deci $\text{dl}$ 1	0.1
centi $\text{cl}$ 1 mili	
$\text{ml}$ 1 micro $\mu\text{l}$ $10$ [-3] 0.001	
1 nano $\text{nl}$ 1 $10$ [-6] 0.000,001	
pico $\text{pl}$ 1 $10$ [-9] 0.000,000,001	
femto $\text{fl}$ 1 atto $10$ [-12] 0.000,000,000,001	
al 1 zepto $\text{zl}$ $10$ [-15] 0.000,000,000,000,001	
$10$ [-18] 0.000,000,000,000,000,001	
$10$ [-21] 0.000,000,000,000,000,000,001	

1 yocto yl

10 [-24] 0.000,000,000,000,000,000,001

Volume  
(l)Kaumaha  
(g)

Weight Base unit: gram (g) ~ l'ilil'i hua prefix he ( ) waiwai o kumu. [0] Hō'ike nā pale i ka waiwai o ka mana. Kaumaha ma waena o 2 ana. Eg 0..ā..10 = 10

Mana Hoailona Prefix [ ] Waiwai

1 Yotta Yg 10 [24] 1,000,000,000,000,000,000,000,000

1 Zetta Zg 10 [21] 1,000,000,000,000,000,000,000,000

1 Exa Eg 10 [18] 1,000,000,000,000,000,000,000

1 Peta Pg 10 [15] 1,000,000,000,000,000,000

1 Tera Tg 10 [12] 1,000,000,000,000,000

1 Giga Gg 10 [9] 1,000,000,000

1 Mega Mg 10 [6] 1,000,000

1 Myria Mg 10 [4] 10,000

1 Kilo Kg 10 [3] 1,000

1 Hecto Hg 10 [2] 100

1 Dekka Dg 10 [1] 10

1 kalama g 1 10 [0] 1

deci dg 10 [-1] 1 keneta cg 10 0.1

[-2] 0.01

1 mili mg 10 [-3] 0.001

1 micro μg 10 [-6] 0.000,001

1 nano ng 1 10 [-9] 0.000,000,001

pico pg 10 [-12] 0.000,000,000,001

1 femto fg 10 [-15] 0.000,000,000,000,001

1 a hiki i ka 10 [-18] 0.000,000,000,000,000,001

1 zepto zg 10 [-21] 0.000,000,000,000,000,000,001

1 yocto yg [-24] 0.000,000,000,000,000,000,000,001

PS-1 (Packaging-standard) uhi i ka pono o ka mea kū'ai: pono oluolu i ho'ohālikelike i ka nui o nā huahana', packaging. Hiki ke hana hou 'ia ka 'eke.

Pono ke aupuni e ho'ohālikelike i ka nui o ka waihona: pa'a (gram, Kg), wai (lita). Pono e pili ka ma'amau i ka 'oihana, 'oihana a me ho'opili pilikino. Pono e hana hou 'ia ka 'eke.

Universe Custodian Guardian Packaging Standard Table.

'O nā paona pa'a (g, Kg) a me nā paona wai (l) hiki ke ho'opili wale 'ia, pu'unaue 'ia.

uted, kuaiia ma na nui 14 i hoikeia ma ka papa.

10 mg > 20 mg > 50 mg > 100 mg  
 200 mg > 500 mg > 1 g > 10 g > 50 g  
 100 g > 200 g > 500 g >  
 1 Kg > 2 Kg > 5 Kg > 10 Kg > 50 Kg  
 100 Kg > 500 Kg > 1000 Kg > 2000 Kg



10 ml > 20 ml > 50 ml > 100 ml  
 200 ml > 500 ml >  
 l > 10 l > 50 l > 100 l > 200 l  
 500 l > 1000 l > 2000 l

Ke alaka'i 'ana i nā mea kū'ai: Pono nā paona wai e hō'ike i ke kumukū'ai no 1 kg, 1 l e ho'ohālikelike i nā kumukū'ai + ke kaumaha maoli a me ke kumukū'ai. Ho'opili 'ia pono e hana hou ia.

**'O kahi huahana me ka ha'aha'a kg, l kumu kū'ai 'o 'Bargain'.**

Hā'awi nā 'oihana waiwai i ka hewa hewa 'Deceitful Pack-aging (fraud)'. Pono nā mea kū'ai aku i ka palekana mai ka ho'opunipuni, ka mana'o'io, 'oihana waiwai, nā mea hana hewa, nā mea hana a me nā mea kū'ai aku e ho'ohana nei 'Ho'opili ho'opunipuni' (nā ma'io ho'oha'aha'a i ka nui) e ho'ohana pono ('oki 'ia) o na mea kuai. Kāko'o 'o MS R3 i ka PS-1 Packaging standard a pa'a i nā mea ho'opunipuni ho'opunipuni hiki ke helu 'ia.

Nā La'ana: Loa'a kahi huahana mea hana i loko o kahi pū'olo 0.440 kg me kā lākou lepili. Ho'opili 'ia ka huahana like me nā mea kū'ai aku home brand, akā ua ho'emi 'ia ka 'ikepili i ka 0.415 kg. 'o kēia i hana 'ia i hiki i ka mea kū'ai aku ke kū'ai aku i kā lākou home brand ma ke kumu kū'ai ha'aha'a ma mua o ka brand mea hana. He ho'opunipuni kēia, ho'opunipuni a puni e ho'opunipuni i ka mea kū'ai aku i ka no'ono'o 'ana he kū'ai kū'ai ka brand home-no ke kumu kū'ai ha'aha'a. I ka 'oia'io, no ka mea, emi ka mea kū'ai 'A'ohe mea ho'opakele a i kekahi manawa pau ka mea kū'ai aku e uku hou aku.

'O ka 2 Ke kū'ai aku nei ka mea hana ma ke kumu kū'ai ha'aha'a, ua like kona huahana me kahi bar-gain. No ka mea he lili'i'i'i ka huahana i ka <sup>nd</sup> pono ia i laila- e kū'ai mua aku no ka emi mai, 'a'ole e ho'olilo hou ia i mea kū'ai. 'O ka 2 Mana'o ka mea hana ma ke 'ano ho'opunipuni, ho'opunipuni a me ka mana'o 'ole, 'a'ole e nānā ka mea kū'ai i ke kaumaha no ka mea ua like kona 'ano me ka nā huahana ho'okūkū.

Hele pinepine mai ka Packaging me ka lili'i'i'i ma mua o ka piha piha (o ka oversized packag-ing). 'O kēia ho'opunipuni ka mana'o e ho'opunipuni i nā mea kū'ai aku i ka mana'o'io e loa'a iā lākou

'oi aku ka loa'a iā lākou!

Pono ke aupuni e ho'ohālikelike i ka nui o ka waihona: pa'a (gram, Kg) a me ka wai (lita). Pono e pili ka ma'amau i ka pā'oihana, 'oihana a me ka ho'opili pilikino. Pono e hana hou 'ia ka 'eke.

## Code Morse

He ala i ho'ohana 'ia ma ke kelepona. Ka lō'ihī o ka hō'ailona: dot, dash !

'O 1 'āpana ka lō'ihī o kahi kiko! 'O Dash he 3 'āpana! 'O ka mamao ma waena o nā 'āpana o ka leka ho'okahi he 1 'āpana. Wahi ma waena o nā leka 3 'āpana. 'O ka mamao ma waena o nā hua'ōlelo he 7 'āpana.

A	● —	M	— — —	Y	— — ● — — —
B	— ● ● ●	N	— ●	Z	— — — ● ●
C	— ● — ●	O	— — — —	1	● — — — — —
D	— ● ●	P	● — — — ●	2	● ● — — — —
E	●	Q	— — — ● —	3	● ● ● — — —
F	● ● — ●	R	● — — ●	4	● ● ● ● —
G	— — — ●	S	● ● ●	5	● ● ● ● ●
H	● ● ● ●	T	—	6	— — ● ● ● ●
I	● ●	U	● ● —	7	— — — — ● ●
J	● — — — —	V	● ● ● —	8	— — — — — ● ●
K	— ● — —	W	● — — —	9	— — — — — ●
L	● — — ● ●	X	— ● ● ● —	0	— — — — — —

'O SOS kahi hō'ailona hō'ailona hō'ailona Morse code

# SOS

● ● ● — — — — — ● ● ●