

Phase 3

Perfect Diameter of Ali Pi

6 - First Perfect Number in Mathematics

6

Ali 

Number – 6 is the first and the smallest 'Perfect Number' in mathematics.

Number 6 – a Perfect Number in the eyes of Greek Mathematicians

Number – 6 is a Perfect Number in the eyes of Greek Mathematicians because **6 equals the sum of its divisors that are smaller than itself**. Such a number is neither 5 nor 7 nor 10, but 6 for the reason:

$$6 = 1 + 2 + 3$$

$$6 = 1 \times 2 \times 3$$

$$6 = 6$$

3 x 3 Magic Square of 6

3	1	2
1	2	3
2	3	1

All rows, columns and diagonals add to **6**

$$**1 + 2 + 3 = 6**$$

Number – 6 is the 1st and Smallest Perfect Number.

- Number – 6 is the 1st Unitary Perfect Number.
- Number – 6 is the multiply perfect Number.
- Number – 6 is a hyper-perfect number.
- Number – 6 is the semi-perfect Number.
- Number – 6 is a primitive semi-perfect or primitive pseudo-perfect Number.
- Number – 6 is the One and Only Number in Mathematics which is 'Perfect' in all aspects and dimensions

Number – 6

Cardinal	6 (six)
Ordinal	6th (sixth)
Numeral system	Senary
Factorization	2.3
Divisors	1,2,3,6
Roman numeral	VI
Roman numeral (Unicode)	Ⅵ, ⅵ
Japanese numeral	六
prefixes	hexa-/hex- (from Greek) sexa-/sex- (from Latin)
Binary	110
Octal	6
Duodecimal	6
Hexadecimal	6
Hebrew	ו (Vav)

Significance of Number – 6

1. 6 is a Centered Pentagonal Number.
2. 6 is a Schroder Number.
3. 6 is a Pentagonal Pyramidal Number.
4. Number – **6 can be partitioned in 11** different ways.
5. 6 is the total number of parts in all Partitions of 3.
6. The Tetrahedron is a Platonic solid with 6 solids.
7. The Octahedron is a Platonic Solid with 6 faces.



Hexagonal cake box

$6 + 1$, $6 \times 66 + 1$, and $6 \times 66 \times 666 + 1$ are primes.

Significance of Number – 6

- 8. In base 10, 6 is a 1 – automorphic number.**
- 9. 6 is one of the four all-Harshad numbers.**
- 10. There are 6 convex regular polytypes in four directions.**
- 11. The smallest non-abelian group is the symmetric group S_3 which has $3! = 6$ elements.**
- 12. 6 is a harmonic divisor number.**
- 13. 6 is a highly composite number.**
- 14. 6 is an octahedral number**
- 15. 6 is also a triangular number and so its square – 36.**

6 – Smallest Number

6 is the smallest number which is the product of two distinct primes.

$$6 = 2 \times 3$$

Both 2 and 3 are Prime Numbers.

6 - Only Perfect Number

6 - The only perfect number that can be sandwiched between **twin primes**.

5 - 6 - 7

Where **5** and **7** are **Prime Numbers**.

Perfect divisibility of Six - 6

The number 6 was believed perfect for being divisible in a special way:

' A sixth part of that number constitutes unity; a third is two; a half -- 3; two thirds (Greek: dimoiron) is four, five-sixths (pentamoiron) is five; six - 6 is the perfect *whole* '

6 and Equilateral Triangle

6 equal sides of 2 equilateral triangles with equal 60 degrees angles

Equilateral triangle:

"An equilateral triangle having **60 degrees** from all the sides should have **three equal sides**"

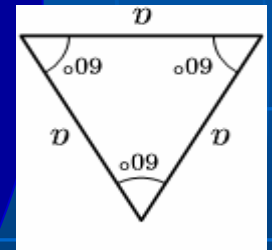
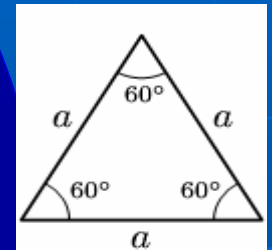
And 2 equilateral triangles of 60 degrees each would have 6 equal sides, which correspond to 360 degrees

60 degrees x 3 equal sides of 'a' corresponds to 180 degrees

60 degrees x 6 equal sides of 'a' corresponds to 360 degrees

360 degrees makes a complete 'perfect circle or a sphere' which would have 6 equal divisions of 60 degrees each

6 x 60 degrees = 360 - total degrees in a Perfect Sphere or a Perfect Circle

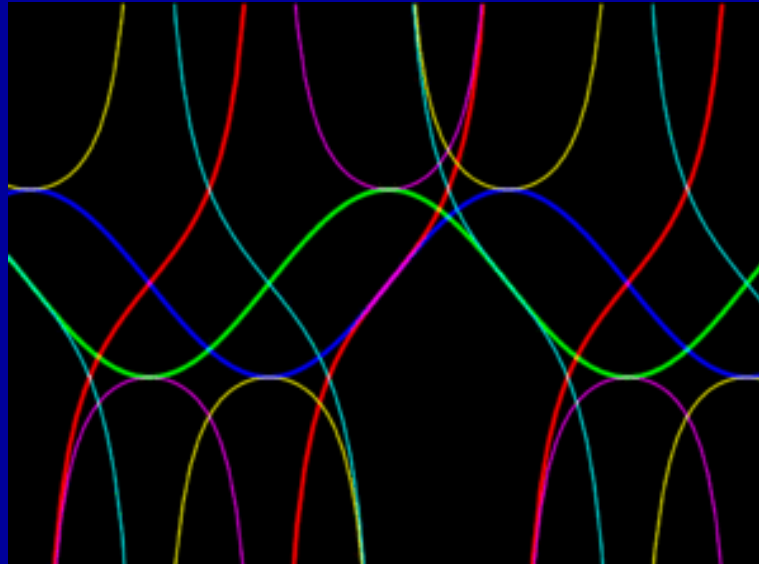


Equilateral Triangles

Only 6 - Trigonometric Functions

Function	Abbreviation
Sine	sin
Cosine	cos
Tangent	tan
Cotangent	cot
Secant	sec
Cosecant	cosec

Six – 6 Trigonometric Functions



Trigonometric functions: Sine, Cosine, Tangent, Cosecant, Secant, Cotangent

6 and Time

Six - 6 is the root number of time in our Universe and life.

- **60 seconds = 1 minute**
= 6 + 0
= **6**
- **60 minutes = 1 hour**
= 6 + 0
= **6**
- **24 hours = 1 day**
= 2 + 4
= **6**
- **366 days = 1 leap year**
= 3 + 6 + 6
= 15
= 1 + 5
= **6**



Carbon- Atomic Number -6

The chemical element 'Carbon' has an atomic number of 6.

Carbon – Most important element -
atomic number - 6

Only 6 – Noble Gases

There are only 6 Noble Gases in Chemistry.

The Noble gases are the elements in Group – 18 of the Periodic Table. They are:

1. Helium
2. Neon
3. Argon
4. Krypton
5. Xenon
6. Radon

Periodic Table of Elements

The image shows a standard periodic table with the noble gases (Group 18) highlighted in green. The noble gases are Helium (He), Neon (Ne), Argon (Ar), Krypton (Kr), Xenon (Xe), and Radon (Rn). The table also includes a legend for element categories: alkali metals, alkaline earth metals, transition metals, post-transition metals, metalloids, nonmetals, halogens, noble gases, lanthanides, and actinides.

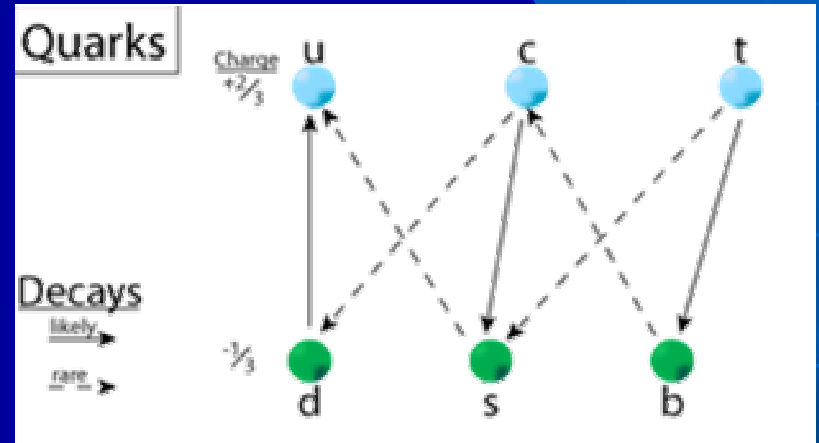
Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Period 1	H	He																
Period 2	Li	Be	B	C	N	O	F	Ne										
Period 3	Na	Mg	Al	Si	P	S	Cl	Ar										
Period 4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Period 5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Period 6	Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Period 7	Fr	Ra	Ac	Rf	Mn	Co	Ni	Pd	Ag	Au	Hg	Tl	Pb	Bi	Po	At	Rn	

Quarks and 6

- Quarks are the only fundamental particles that interact through all four of the fundamental forces.

Quarks come in ----- 6 flavors

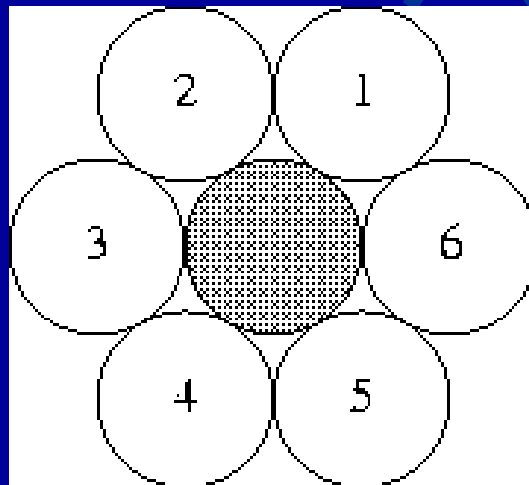
1. Up
2. Down
3. Charm
4. Strange
5. Top
6. Bottom



- In particle physics, the quark is one of the two basic constituents of matter, the other is the lepton.
- Antiparticles of quarks are called anti-quarks.
- In every proton or neutron, there are exactly 3 quarks each.

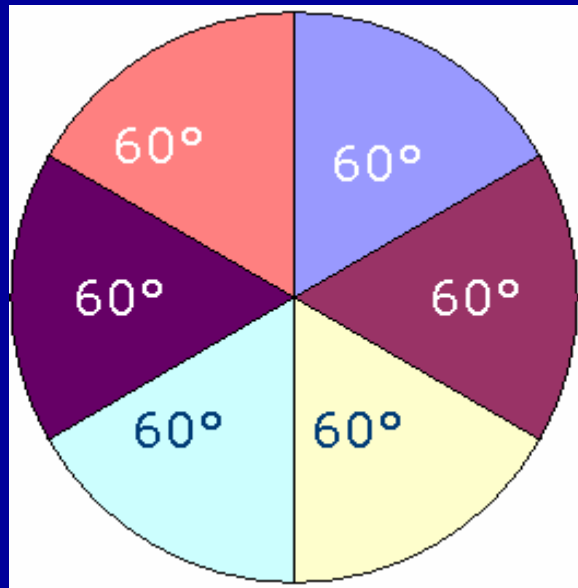
6 and Kissing Number Problem

Only Number 6 - Answer to Kissing Number Problem in 2-Dimensions



Perfect Circle in 6 Sectors

$$6 \times 60^\circ = 360^\circ$$



6 x 6 Apocalyptic Magic Square --- 666

3	107	5	131	109	311
7	331	193	11	83	41
103	53	71	89	151	199
113	61	97	197	167	31
367	13	173	59	17	37
73	101	127	179	139	47

A beastly 6 x 6 magic square of Prime Numbers invented by A.W. Johnson – published in the Journal of Recreational Mathematics.

Each row, each column and each diagonal and broken

diagonal sum to ----- **666**

6 and its magical applications

- $6 \times 66 \times 666 \times 6666 \times 66666 \times 666666 + 1$

is a prime number.

- Most Successful Management Book:

Six Sigma

By: Mikel Harry, PHD & Ricahard Schroeder

Sexy Primes and 6

Sexy Primes are such that n and $n + 6$ are both prime. 'Sexy' comes from the Latin for '**Six**' - **6**

Sexy Primes are either of the form

$$6n + 1 \text{ or } 6n - 1$$

Division of Prime Numbers by 6

Every Prime Number except for 2 and 3 will eventually become divisible by **Number - 6** if you either add or subtract 1 from the number.

3 x 3 Magic Square of 6

2	2	2
2	2	2
2	2	2

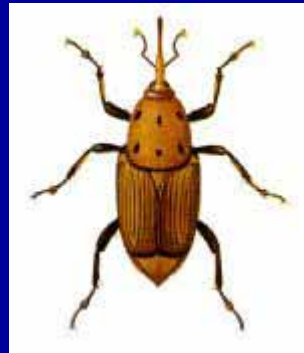
All rows, columns and diagonals add to **6**

$$2 + 2 + 2 = 6$$

2 --- First and Only Even Prime Number

6 and Insects

All insects have **Six – 6 legs**



6 – Hexagonal Cells and Bees

Pappus discussed the practical intelligence of bees in constructing hexagonal cells with **6 equal sides**. He concluded that bees knew that **a hexagon with 6 equal sides**, using the same material, would hold more than the other shapes.

Pappus, claiming that man has a greater share of wisdom than the bees, then showed that of all regular figures with equal perimeter, the one with the larger number of sides has the larger area, **the circle being the limiting maximum.**

6 and Human Vertebrae

A normal human spine has 33 vertebrae when the bones that form the coccyx are counted individually.

$$\begin{aligned} 33 &= 3 + 3 \\ &= 6 \end{aligned}$$

6 – Bones in the Middle Ears

The number of bones in the middle ears - six (6).

- 1.** malleus - 2 bones.
- 2.** incus - 2 bones.
- 3.** stapes - 2 bones.

A total of 6 bones

6 and its Reversal 9

6-9

six - nine is the shape of a child in mother's womb.



6 months baby

6 and 9

6 is the binary complement of
Number - **9**

6 ---- **0110**

9 ---- **1001**

6 and Perfect Vision

6/6 is considered as the '**Perfect Vision**' of a human eye.



Only 6 Senses In Humans

1. Taste
2. Hearing
3. Vision
4. Touch
5. Smell
6. 6th Sense

6 Degrees of Separation

Six – 6 degrees of separation refers to the idea that, if a person is **one "step"** away from each person he or she knows and **two "steps"** away from each person who is known by one of the people he or she knows, then everyone is **no more than six "steps"** away from each person on Earth. Hence, six degrees of separation is somewhat synonymous with the idea of the **"small world" phenomenon.**

6 Development Phases in Human Birth

Only **Six - 6** development phases in human birth from the development of **human embryo to human birth** as per modern medical research

6 Feet Under

The number of feet below ground level a coffin traditionally buried is 6.

The phrase "**six feet under**" means that a person (or thing, or concept) is dead.

Only 6 Dimensions

1. North
2. South
3. East
4. West
5. Earth (Center)
6. Heaven (Space)

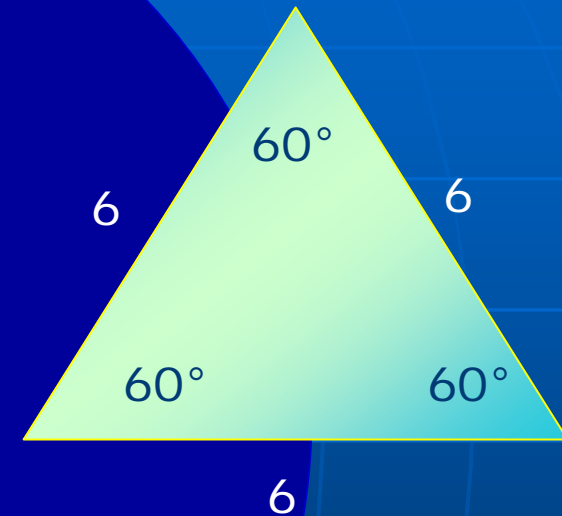
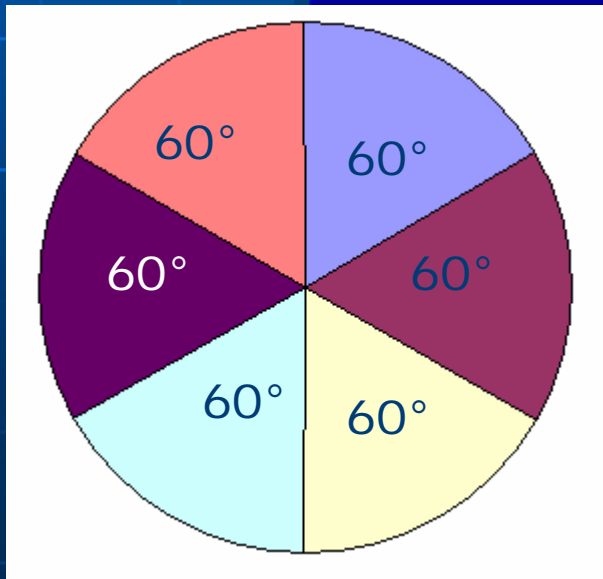


Only 6 Relationships in the World and Mathematics

1. Greater than. ($>$)
2. Less than. ($<$)
3. Equal to ($=$)
4. Not Equal to (\neq)
5. Greater than Equal to. (\geq)
6. Less than Equal to. (\leq)

Perfect Triangle - 60° Perfect Circle – 6 x 60°

$$6 \times 60^\circ = 360^\circ$$



In Perfect Equilateral Triangle all sides are equal with 60° each

4 x 4 Magic Square of 60

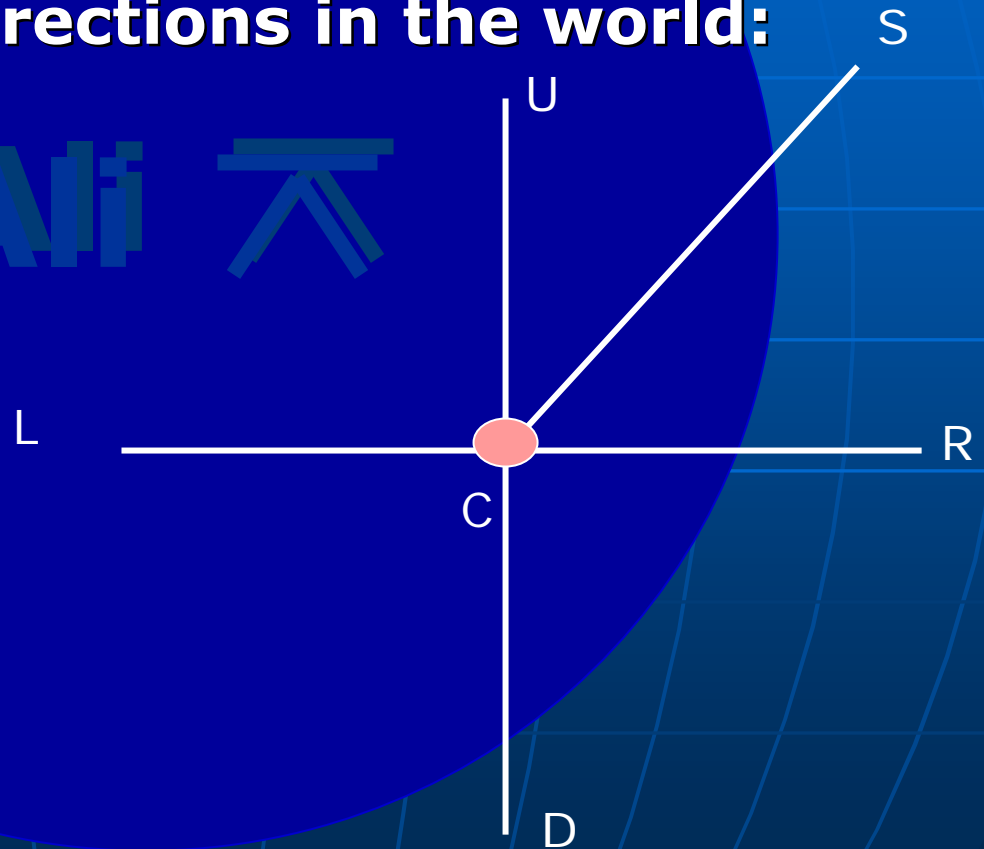
14	17	17	12
14	14	14	18
14	16	16	14
18	13	13	16

All rows, columns and diagonals add to **60**

Only Six – 6 Directions

Six - 6 directions in the world:

1. Up
2. Down
3. Left
4. Right
5. Center
6. Space



Only 6 Inhabited Continents

The number of inhabited continents on earth are
only Six – 6

1. Europe
2. Africa
3. Australia
4. North America
5. South America
6. Asia



Only 6 Major Climates

There are **six - 6 major climate** types on our earth

- 1. Moist Tropical Climates.**
- 2. Dry Climates.**
- 3. Humid Middle Latitude Climates.**
- 4. Continental Climates.**
- 5. Cold Climates.**
- 6. Highland Climates.**

6 and Astronomy

- **Messier object M6**, a magnitude 4.5 open cluster in the constellation **Scorpius**, also known as the **Butterfly Cluster**.
- The **New General Catalogue object NGC 6**, a spiral galaxy in the constellation **Andromeda**.
- The **Saros** number of the solar eclipse series which began on **-2691 March 16** and ended on **-1393 May 3**. The duration of Saros series 6 was **1298.1 years**, and it contained **73 solar eclipses**.
- The **Saros** number of the lunar eclipse series which began on **-2642 July 25** and ended on **-1091 February 10**. The duration of Saros series 6 was **1550.6 years**, and it contained **87 lunar eclipses**.
- The Roman numeral **VI** stands for subdwarfs in the **Yerkes spectral classification scheme**.
- The Roman numeral **VI** (usually) stands for the sixth-discovered satellite of a planet or minor planet (e.g. **Jupiter VI**).

Only Six – 6 Questions in our Universe

- **Six – 6 is a 'Universal Perfect Number'** of our universe, life, time and space because there are only six – problems or questions or answers to any knowledge in our universe, life, time and space.

The Only **Six – 6 Questions** in our Universe are:

- **What**
- **Why**
- **When**
- **Where**
- **Who**
- **How**



There is no other question to be asked in any science or mathematics or any knowledge in our Universe. So with 6 questions, there should be 6 answers.

6 – Questions
6 – Answers

Greek - Hexa and 6

Hexa is Greek for "six". Thus:

- A **hexahedron** is a polyhedron with **6** faces, with a cube being a special case
- An **hexagon** is a regular polygon with **6** sides
 - *L' Hexagone* is a French nickname for the continental part of France
- A **hexapod** is an animal with **6** legs; this includes all insects
- **Hexameter** is a poetic form consisting of 6 feet per line
- "**Hexadecimal**" combines *hexa-* with the Latinate *decimal* to name a number base of 16
- A "**hex nut**", of course, is a nut with **6** sides, and a hex bolt has a **6** sided head.

Latin - Sex and 6

*Sex- is a Latin prefix meaning "six".
Thus:*

- *A group of 6 musicians is called a **sextet**.*
- *6 babies delivered in one birth are **sextuplets**. The first set of sextuplets of whom all six survived are the Dilley sextuplets.*
- *People with **sexdactyly** have 6 fingers on each hand*
- *The measuring instrument called a **sextant** got its name because its shape forms **one sixth** of a whole circle.*

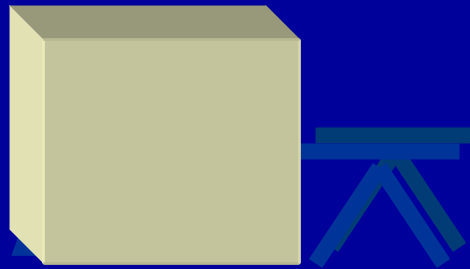
6 and Magic Square of 15

15 from all sides – straight or diagonally = 15
= 1 + 5
= 6

8	1	6
3	5	7
4	9	2

Add from any side, diagonally or straight from up to down or from left to right or other wise and the answer would be Number -15. The root number of 15 is $1 + 5 = 6$.

Cube with 6 faces



**The Cube is a Plutonic Solid with
6 faces**

Area of a Perfect Cube = 216

Volume of a Perfect Cube = 216

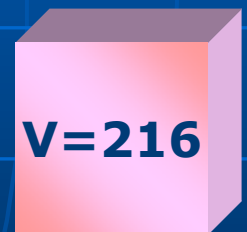
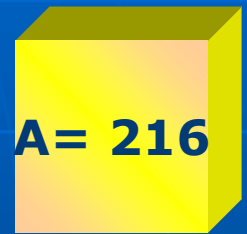
- **Area of a Cube = 6 x (square of side 'a' of a cube)**
- **Volume of a Cube = a x a x a = Cube power of 'a'**

Only when a = 6 = Side of a Cube

- **Area of a Cube = 6 x (6 x 6)**
= 216.....A

- **Volume of a Cube = 6 x 6 x 6**
= 216.....B

- **216 is the only cube in Mathematics that has also the sum of three – 3 cubes.**



$$3^3 + 4^3 + 5^3 = 216$$

$$6 \times 6 \times 6 = 216$$

- **Pythagoreans considered 216 to be a mystical number, because it is 6 cubed.**

$$(6 \times 6 \times 6)$$

- **6 was also considered a 'Circular number' because its powers always ended in 6.**

$$216 = 6^3$$

- **6 is the difference between 2 powerful numbers:**

$$6 = (5^4)(7^3) - (463)^2$$

666 and 666,666

- **666** ----- **36th** Triangular number
- **666th** Triangular number = **222,111**
- **222,111** ----- $(2 + 2 + 2)$ --- $(1 + 1 + 1)$
222,111 ----- $6 - 3$ ---- **63**
- **222,111** when divided by $(1 + 36 = 37)$ gives:
 $222,111/37 = 6003$
- **63** ----- is the reversal of **36**
- There exists **only one** Pythagorean triangle **693 – 1924 – 2045** whose area is:

666,666

6 and Only Finite Symmetric Group with Automorphism

- **S6** with **720 elements** is the only finite symmetric group which has outer automorphism.

- The Unique equation:

$x^3 + y^3 + z^3 = 6xyz$ has a unique solution

$x = 1, y = 2$ and $z = 3$

www.ali-pi.com

[Acta Arithmetica v73, 201]

6 – Lucky Number

Number – 6 is the 'Lucky Number' of Chinese.

- $6 = \sqrt{1^3 + 2^3 + 3^3}$
- There are 6 regular polytypes
- The Pythagoreans associated 6 with marriage and health. It also stood for equilibrium, symbolized by 2 triangles, base to base.

Only 6 tastes of Indian Medicine Ayurveda

The number of tastes in traditional Indian Medicine called Ayurveda are **six – 6.**

1. Sweet
2. Sour
3. Salty
4. Bitter
5. Pungent
6. Astringent

4 x 4 Magic Square of 6

2	1	1	2
1	2	2	1
1	2	2	1
2	1	1	2

All rows and columns add to **6**
using only **1** and **2**

Perfect Role of Six – 6 in Religions and Cultures

'These works are recorded to have been completed in **six** days....because six is a perfect number....because the perfection of the works was signified by the number **six**. For the number six is the first to be made up of its own parts, i.e., of its sixth, third and half, which are respectively one, two and three, and which make a total of six.'

(St. Augustine)

6 and Sextant

- **Sextant – 1/6th of the Whole Circle**
- The measuring instrument called a sextant got its name because its shape forms **1/6th** of a whole circle.

Six – in Cricket

In cricket, a **'sixer'** is a shot in which the ball clears the boundary without bouncing scoring six - **6 runs.**



Just Six - 6

- **Pascal** discovered in 1640 AD at the age of 16, his theorem of the Mystic Hexagon.

'If any **6** points are chosen on a conic section, labelled 1,2,3,4,5,6, then the intersection of the lines 1-2 and 4-5, 3-4 and 6-1, 5-6 and 2-3, will lie on a **straight line**.'

- **Brianchon** enunciated the dual theorem, in which the **6** original points are replaced by **6** tangents to the conic.

A Remarkable Book by

Martin J. Rees

Just Six Numbers: The deep forces that shape the Universe

6 and Dice

- **Only 6 Numbers on the Playing Dice.**
- **There are only six - 6 numbers on the playing dice, which we use to play for different games.**
- **1, 2, 3, 4, 5, 6, ----- Six - 6 numbers on the playing dice**



6– Perfect Universal Mathematical Number



**6 - Universal and Mathematical
Perfect Number**

God and Nature's Perfection in the Universe - 6



Is the God and Nature's
Perfection in the Universe

Twelve - 12 and Perfect Circle

- **Twelve is the kissing number in three dimensions.**
- It is possible to construct a perfect circle divided into 12 sectors of 30 degrees each using a compass and straightedge.

$$12 = 6 + 6$$

Steps to make a Perfect Circle

1. Using a compass, construct a simple circle.
2. Taking care not to change the radius setting, draw a second circle with center anywhere on the perimeter (circumference) of the first.
3. Now go to the two points where the second circle crosses the first and draw two more circles from these centers.
4. Continue this process to draw the final three circles working your way around the perimeter (circumference) of the first.
5. Finally connect the center of the original circle with all other points of intersection using a straight edge.

You now have twelve (12) radial lines emanating from the center separated by twelve (12) - 30 degree sectors, all constructed from 7 equal sized circles.

360 Degrees and Number - 36

360 Degrees of a Perfect Circle or a Perfect Sphere

- **360 Degrees ----- 3 - 6 - 0**
- **360 36 x 10**
- **6 x 6 x 10 = 360..... 6 x 6 = 36**
- **360 = 36 x 10 = 6 x 6 x 10 = 360**


$$36 \times 10 = 360^\circ$$

3 Numbers Below - 6

- There are **3 Odd Numbers** below Number – 6, i.e.
1, 3, 5.....
- There are **3 Prime Numbers** below Number – 6, i.e.
2, 3, 5.....
- There are **3 Even Numbers** below Number – 6, i.e.
0, 2, 4.....

3 is below 6.....36



Number – 3 and Perfect Fraction of 1/6 to get Number – 6

$$6 = 3 / (1/6 + 1/6 + 1/6) \\ = 6$$

- So if we divide the Number – 3 with the sum of three 'Perfect fraction' of 1/6, we would get 'Perfect Universal and Mathematical Number – 6.'

**1/6 - Perfect Fraction of two Perfect
Numbers of 1 and 6**

Special link between Numbers 3 and 6

- There is a **special link between Numbers – 3 and 6**

$$3 + 3 = 6$$

$$3 \times 2 = 6$$

$$6 - 3 = 3$$

- If we write 6 upside down, it will become 9**
- The difference between 9 and 6 is also 3**

$$9 - 6 = 3$$

And also:

- There are 3 Odd Numbers below Number – 6, i.e. **1, 3, 5.....**
- There are 3 Prime Numbers below Number – 6, i.e. **2, 3, 5.....**
- There are 3 Even Numbers below Number – 6, i.e. **0, 2, 4.....**

Also:

360 Degrees ----- **3 – 6 – 0**

Secrets of 3 and 6 in 360°

360°

3 – Perfect Radius of a Perfect Circle

6 – Perfect Diameter of a Perfect Circle

0 – Perfect Circumference

Definition of 3

3

Ali π

3 is the **Perfect Constant Radius** of
a **Perfect Circle** or **Perfect Sphere**
or **Perfect Sphere of Expanding**
Universe

Perfect Radius

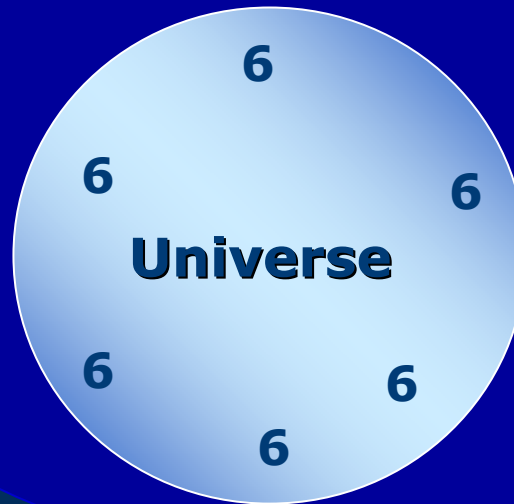


Perfect Radius of a Perfect Circle

3

6 – GOD and Nature's Perfection

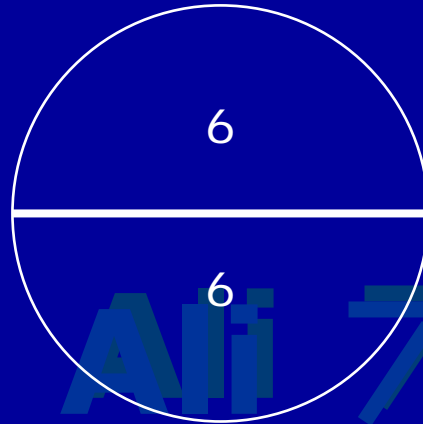
God's Perfection in the Universe



Definition of Six - 6

The **Number - 6** is the **Universal Mathematical Perfect Constant Number and the Perfect Constant Diameter of a Perfect Circle or a Perfect Sphere or a Perfect Expanding Spherical Universe.**

Perfect Diameter



Perfect Diameter of a Perfect Circle

6