Practical Houdini Math Tips

SINE & COSINE

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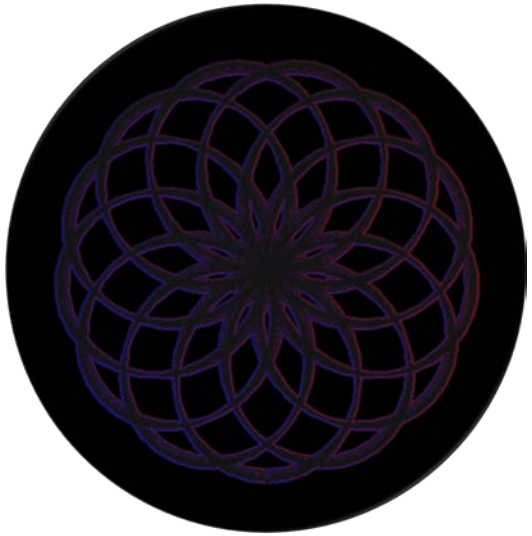
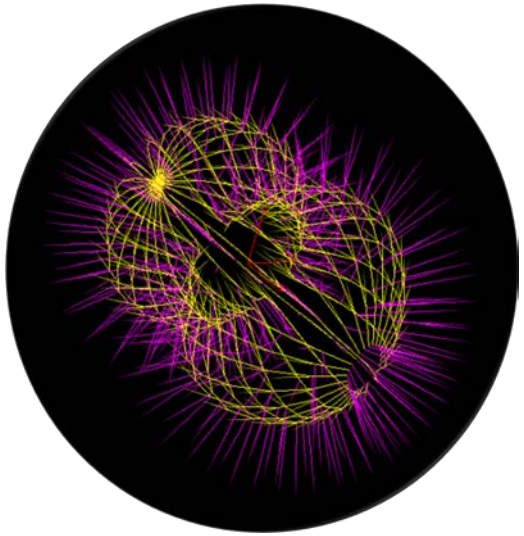
Creating Oscillating and Motion

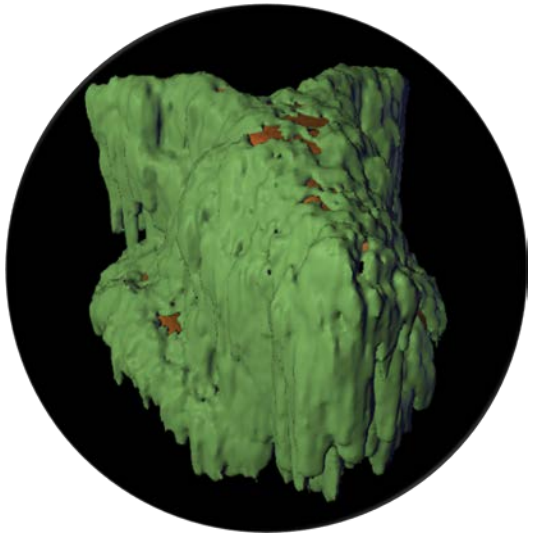
Project Overview



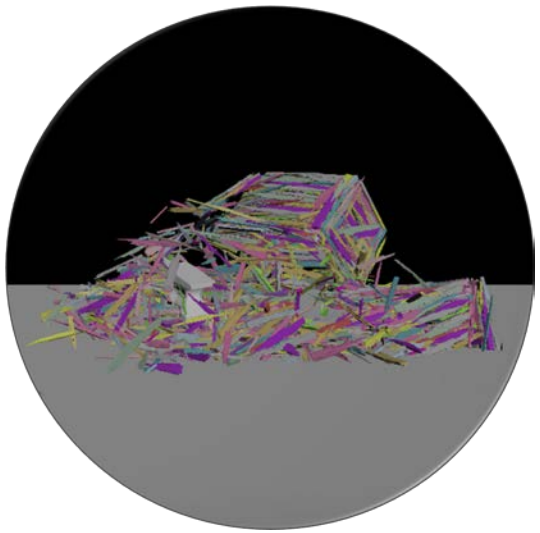
Sine & Cosine



Vector’s



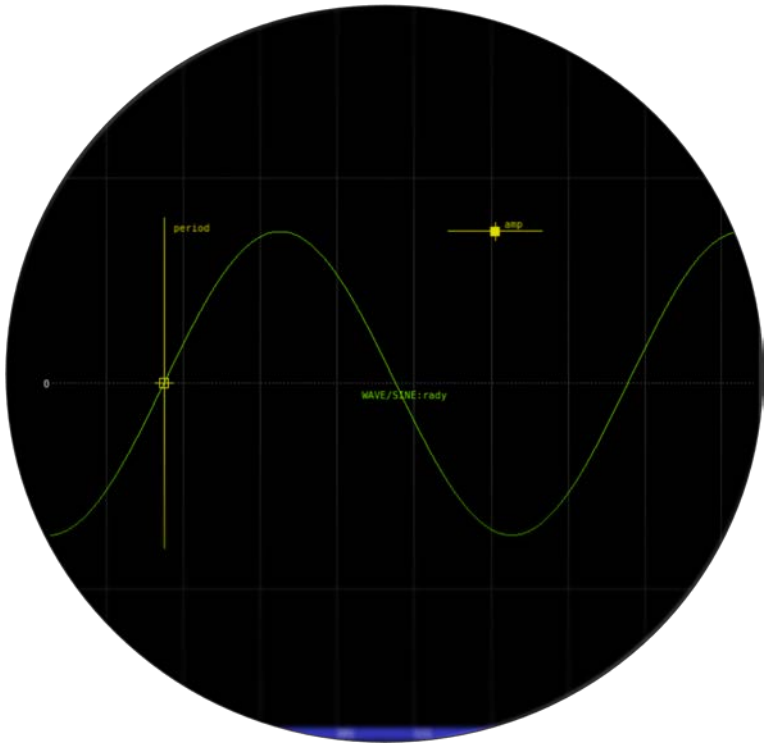
Dot & Cross Products



Matrices & Quaternion's

What to Expect ?

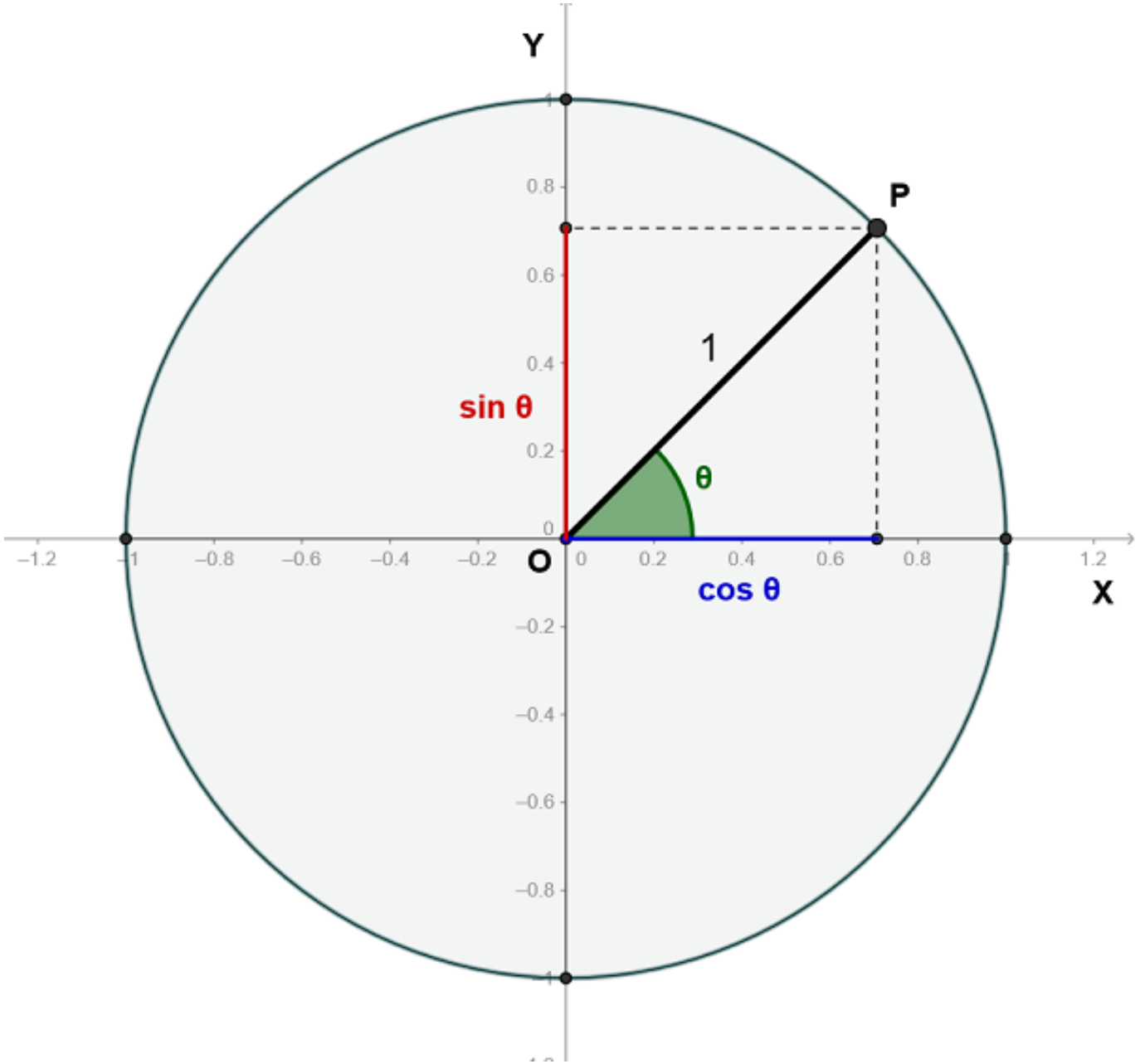
- Basic Math Fundamentals for VFX Artist’s
- Application Focused
- Basic Theory
- Houdini Demonstration



Sine & Cosine

- Oscillating motion
- Circular / Wavelike shapes
- Right Angle Triangle
- Unit Circle
- Radian’s

- sin(Angle Value)
- cos(Angle Value)
- sin + cos = Unit Circle



Summary

- sin()
- cos()
- Motion FX
- Unit Circle

Vectors

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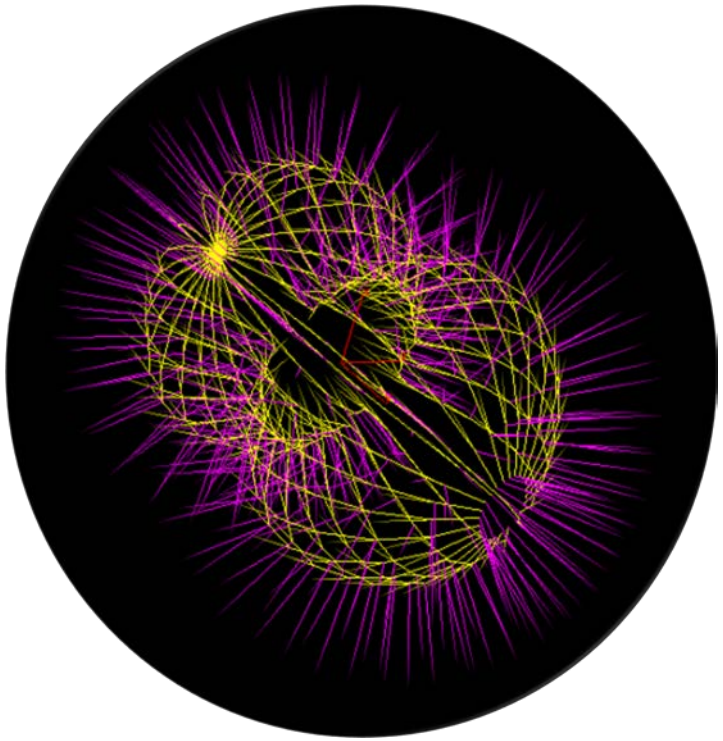


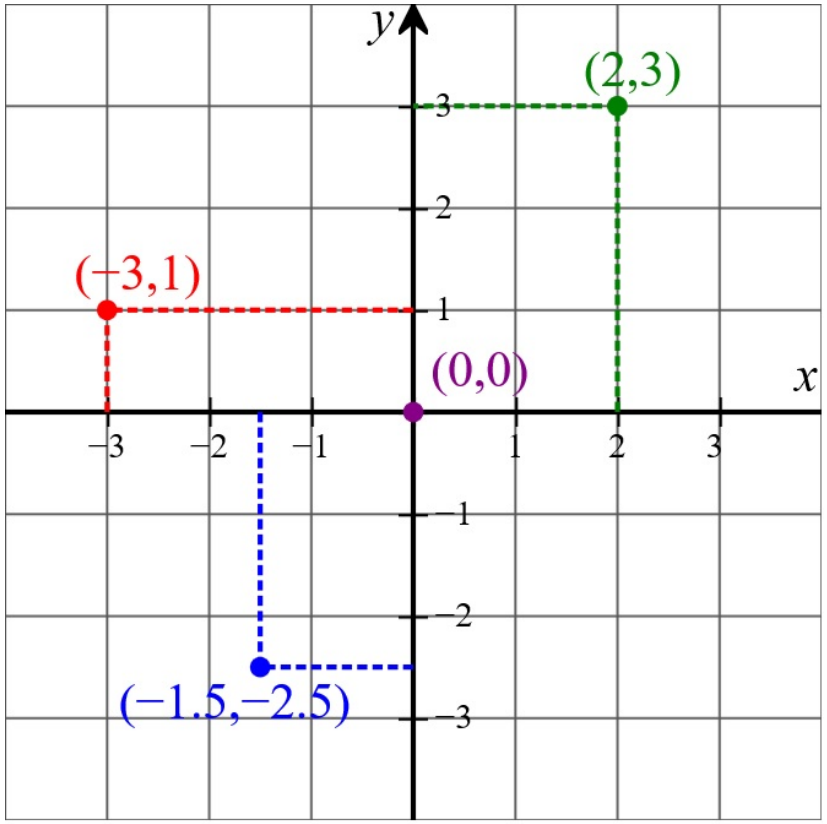
Vectors

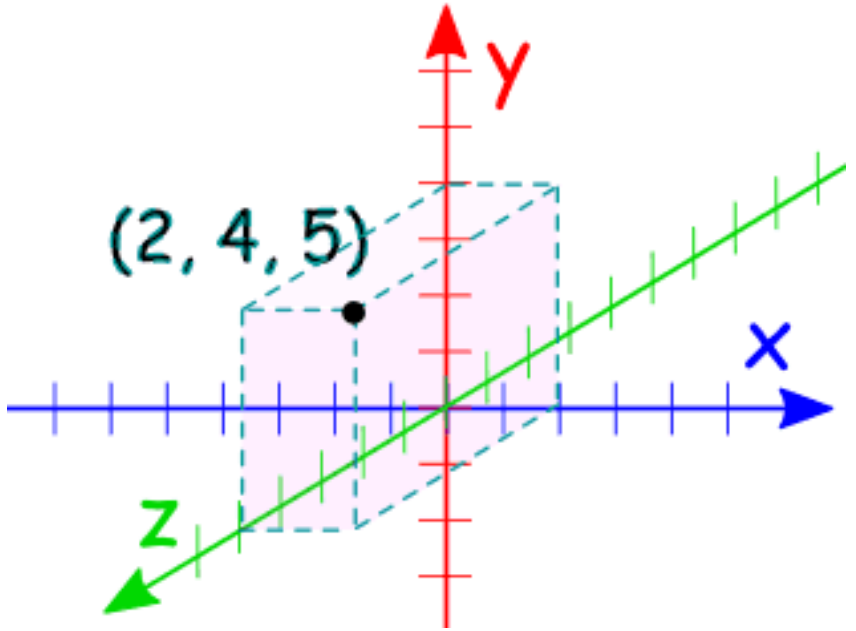
- Cartesian Coordinate System
- Creating & manipulating Vectors
- Visualising vectors
- Houdini Vector Types
- Example Scenes

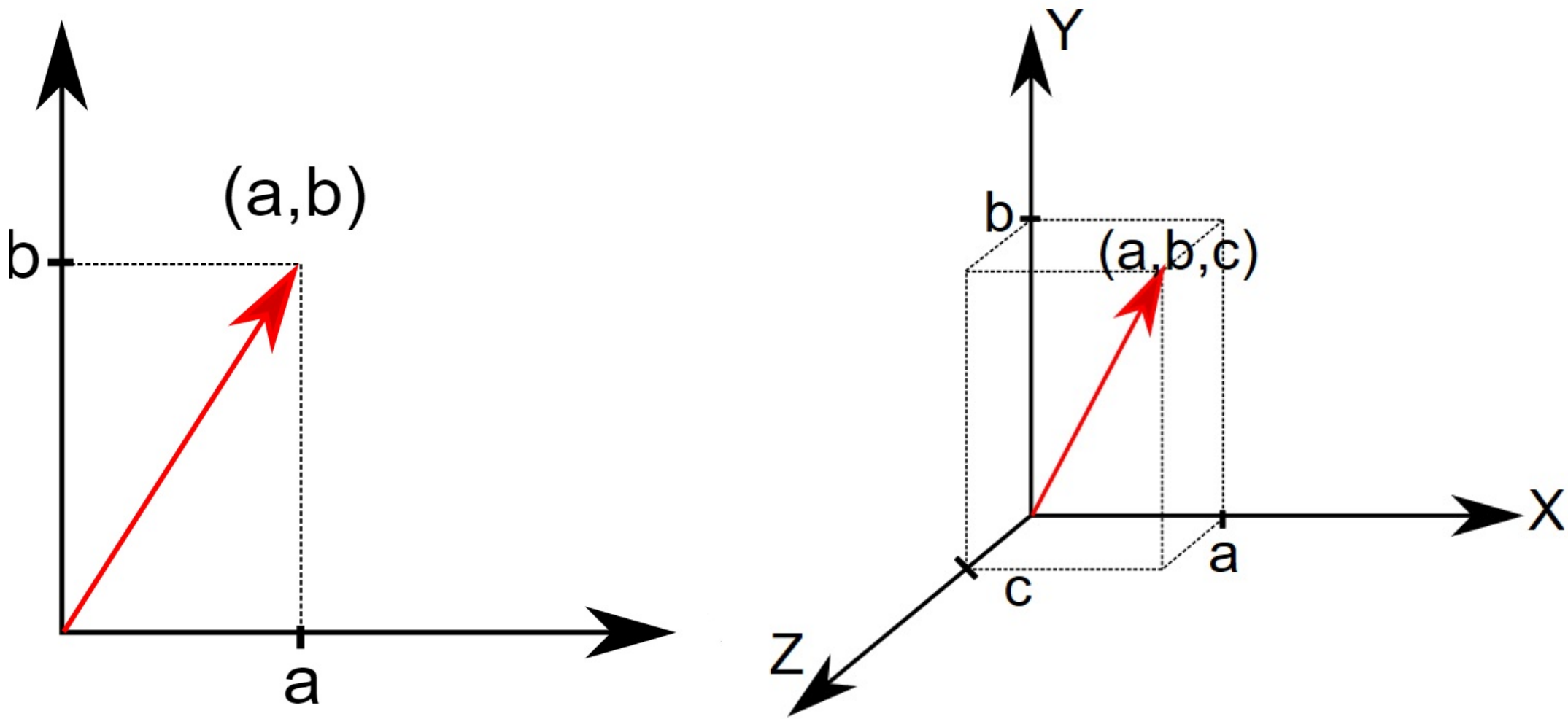
Vectors

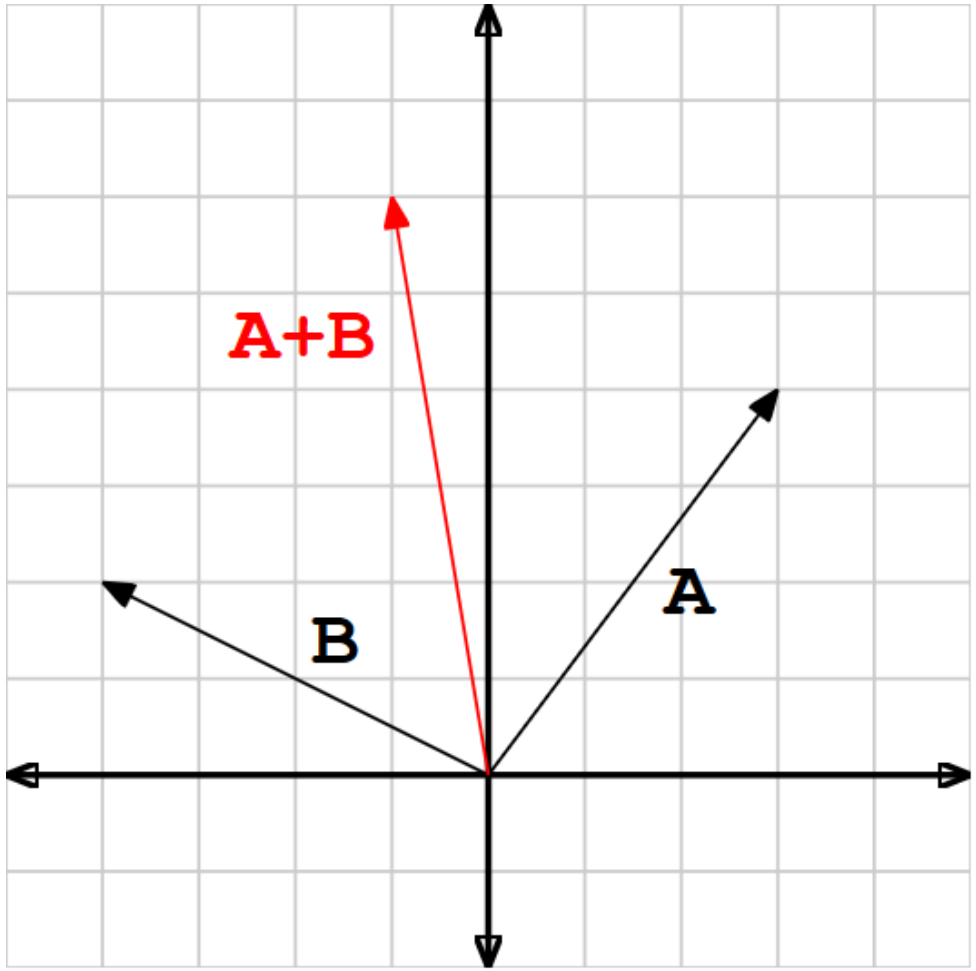
- Scalar (Magnitude) = (4,1,5)
- Vector (Direction & Magnitude) = (10,12,5)
- Vector Data Type (Number List) = (X,Y,Z)

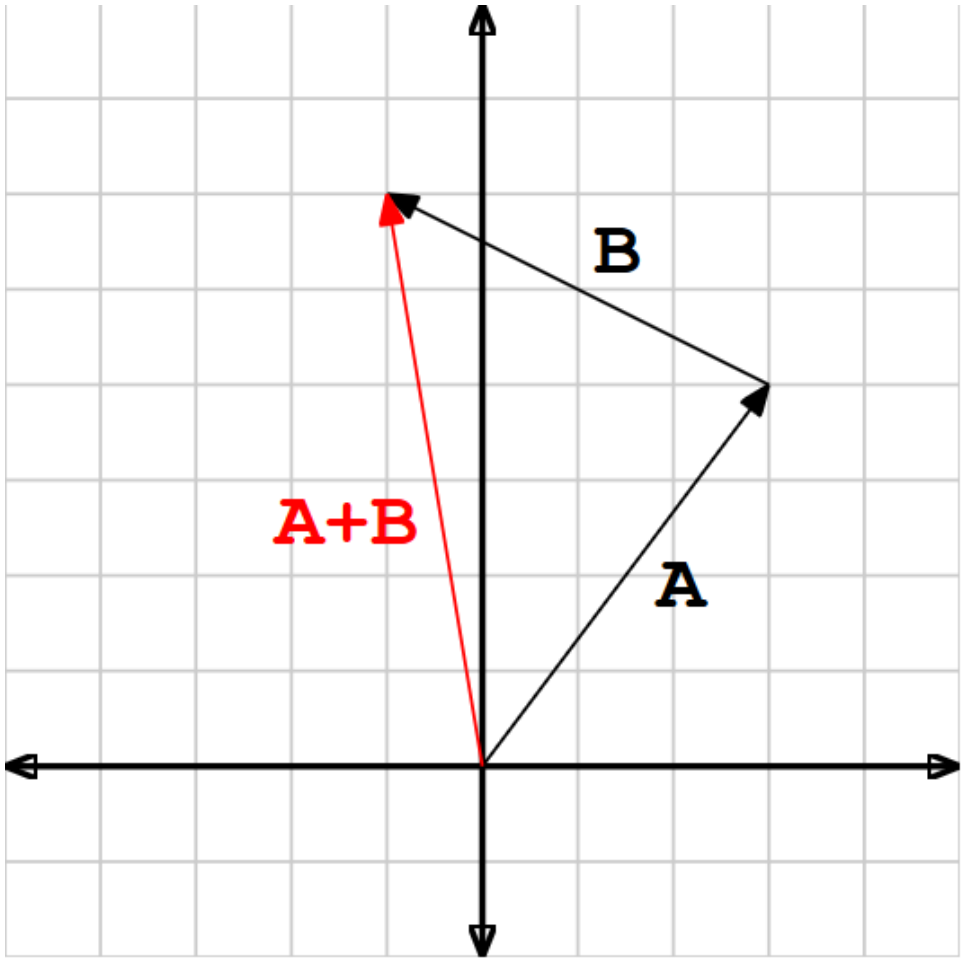
Cartesian Coordinate System






(a,b)
b
a
Y
b
(a,b,c)
X
a
c
Z


A+B
B
A


B
A+B
A

Summary

- Vectors,Scalars & Vector Data Types
- Magnitude + Direction
- Basic Operations
- Visualization