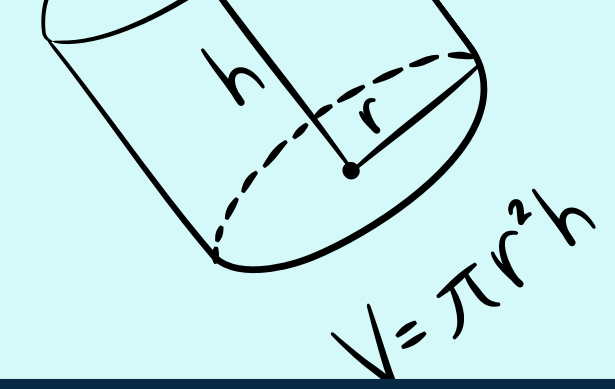
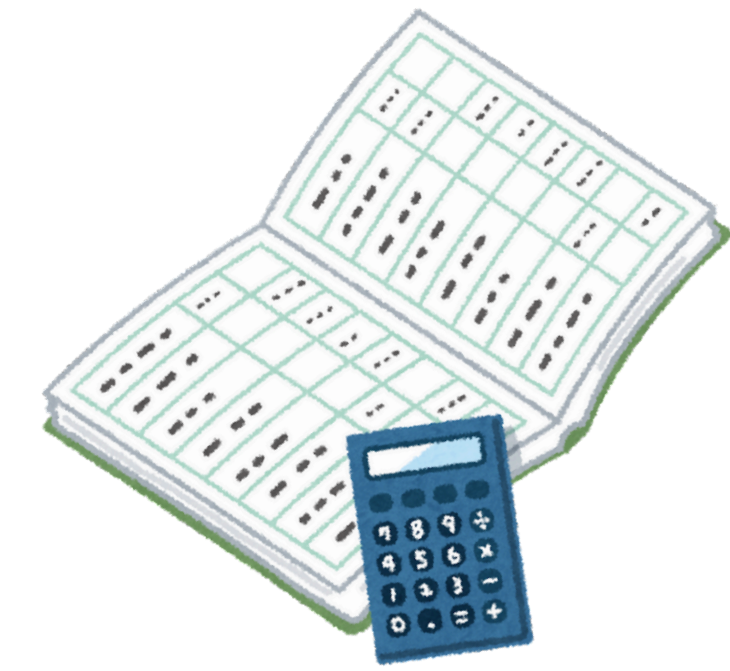


$$\sin(\theta) =$$



$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$



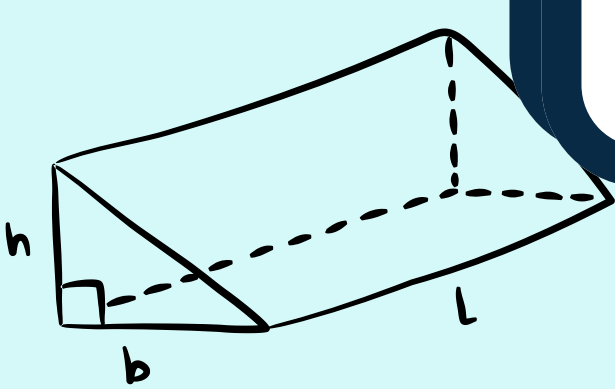
LINCAL

Linear algebra calculator
for students

$$= mx + b$$



$$V = \frac{4}{3} \pi r^3$$



$$V = \frac{1}{2} bhl$$

$$\frac{x}{a} + \frac{y}{b} = 1$$

$$ax^2 + bx + c = 0$$

OUR CALCULATOR

Matrix Operations

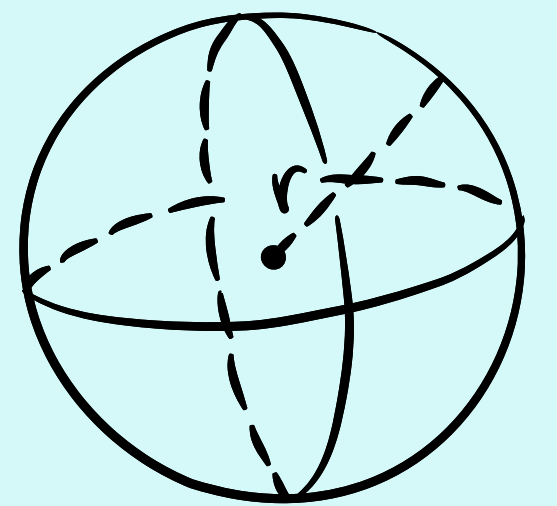
Vector Operations

Complex Vector Operations

Complex Numbers Operations

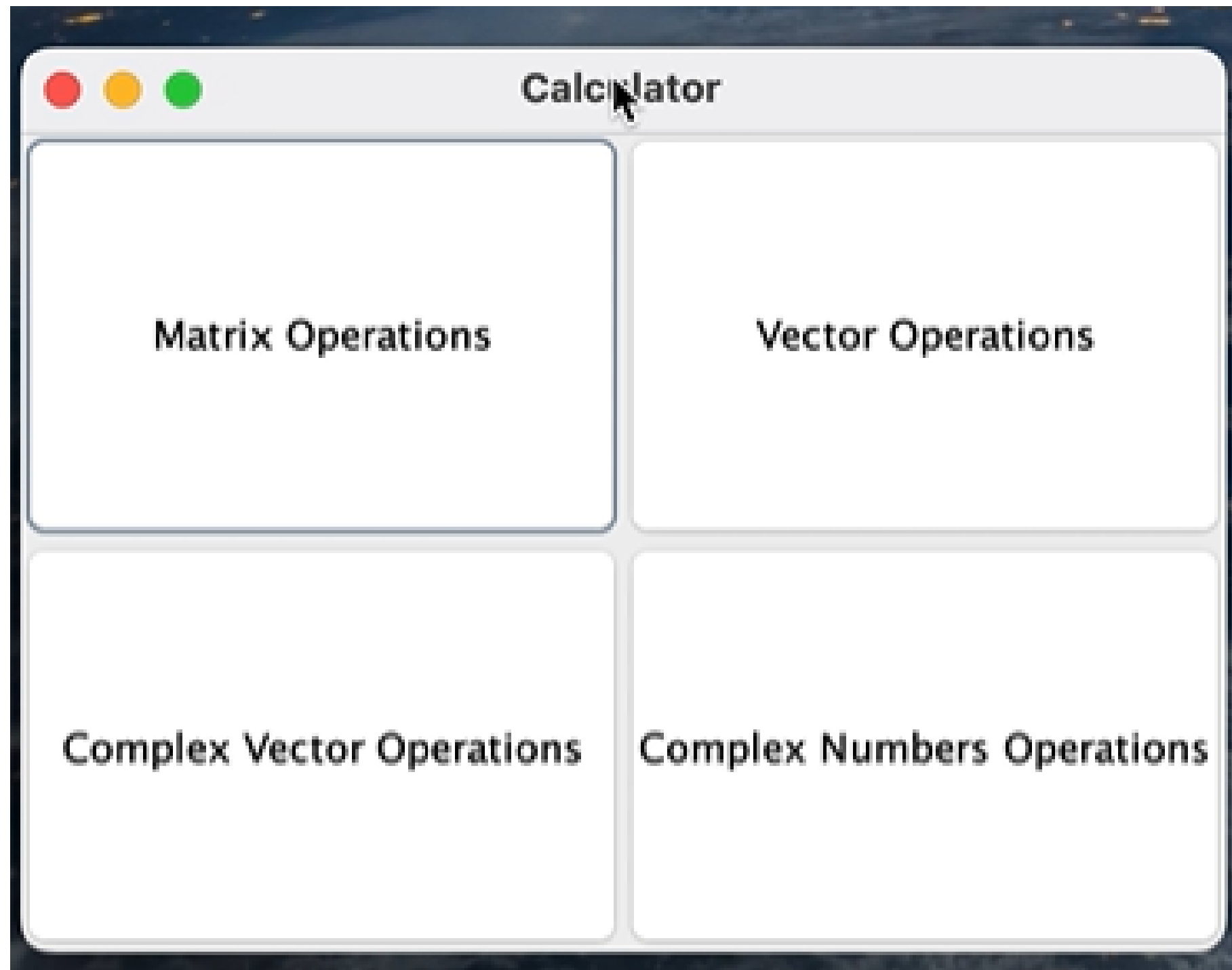
$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$y = mx + b$$



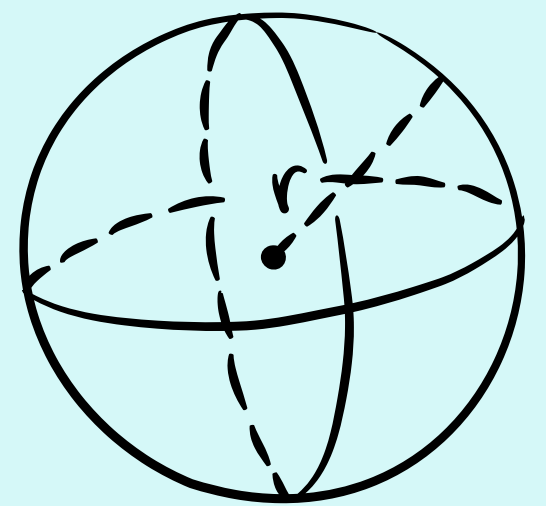
$$V = \frac{4}{3} \pi r^3$$

OUR CALCULATOR



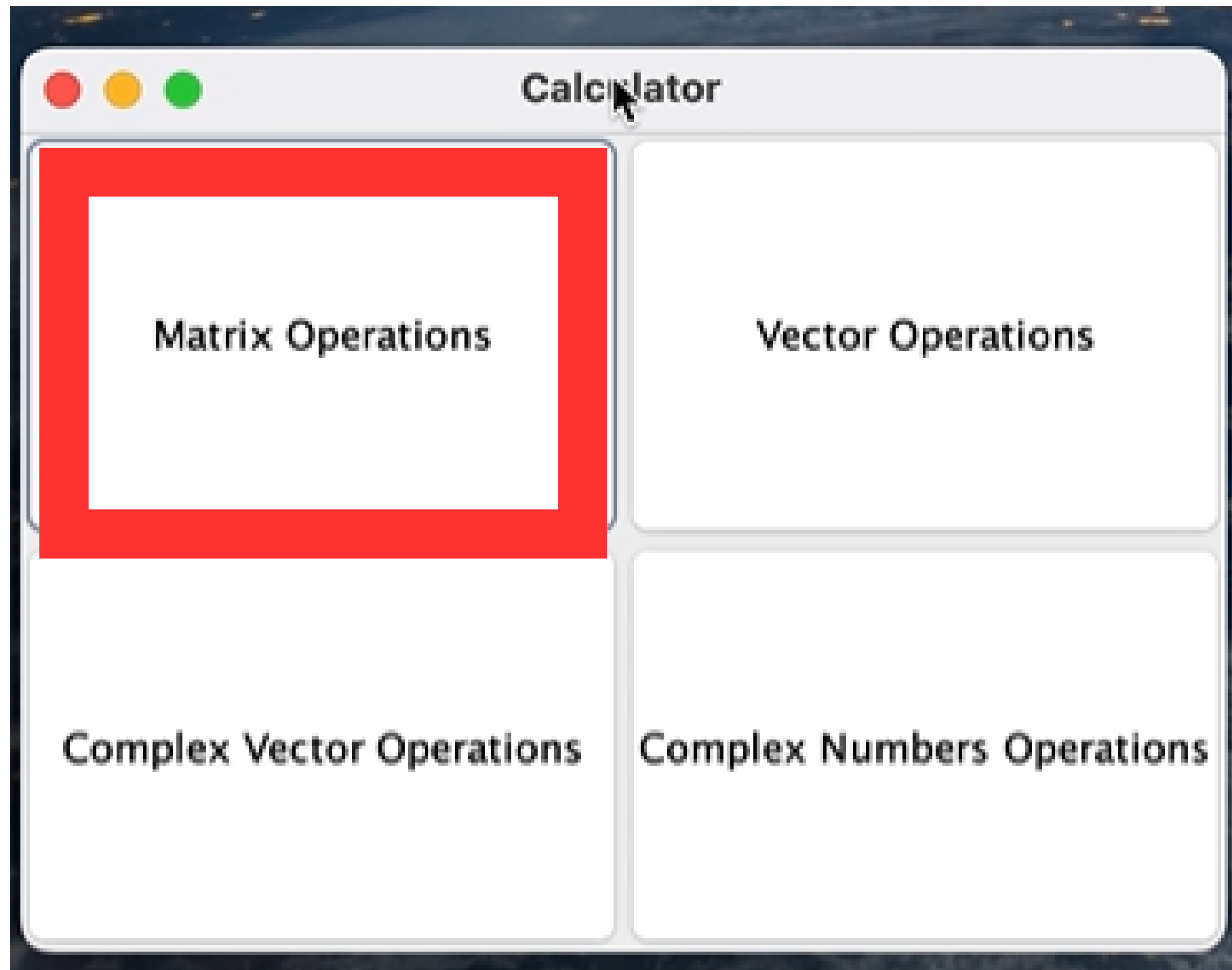
$$= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$y = mx + b$$



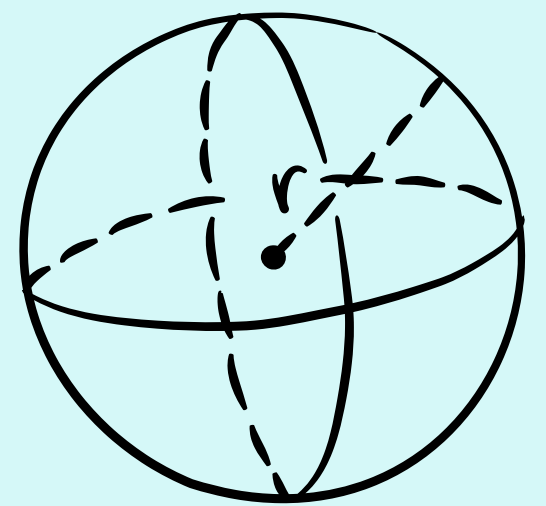
$$V = \frac{4}{3} \pi r^3$$

OUR CALCULATOR



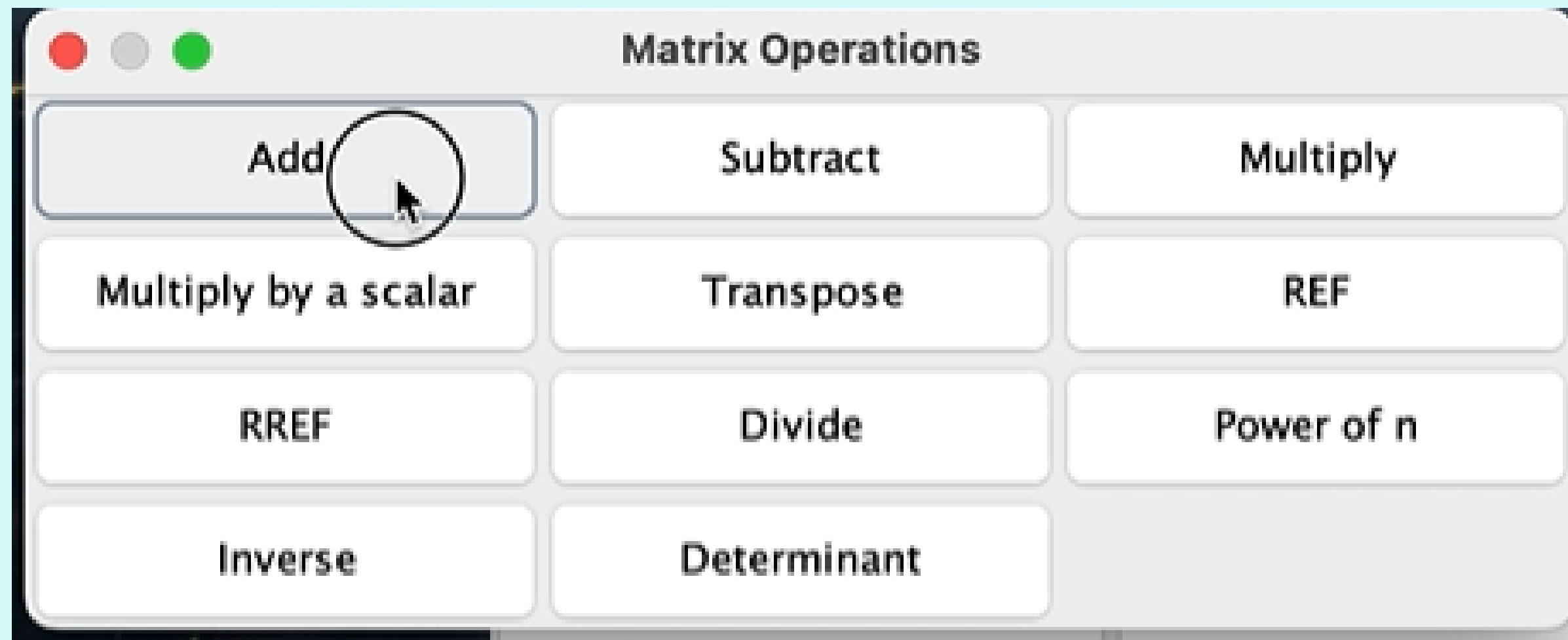
$$= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$y = mx + b$$



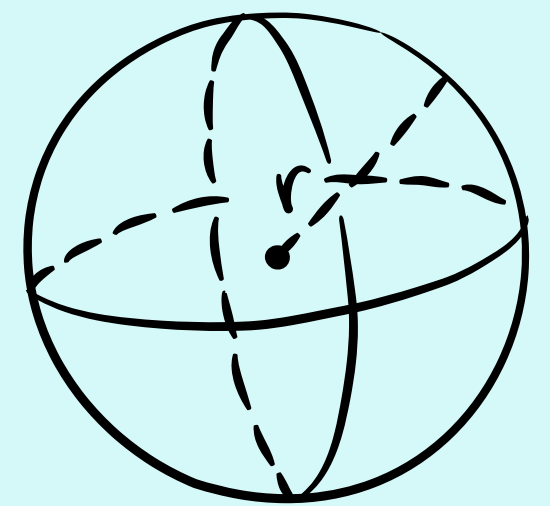
$$V = \frac{4}{3} \pi r^3$$

MATRIX OPERATIONS



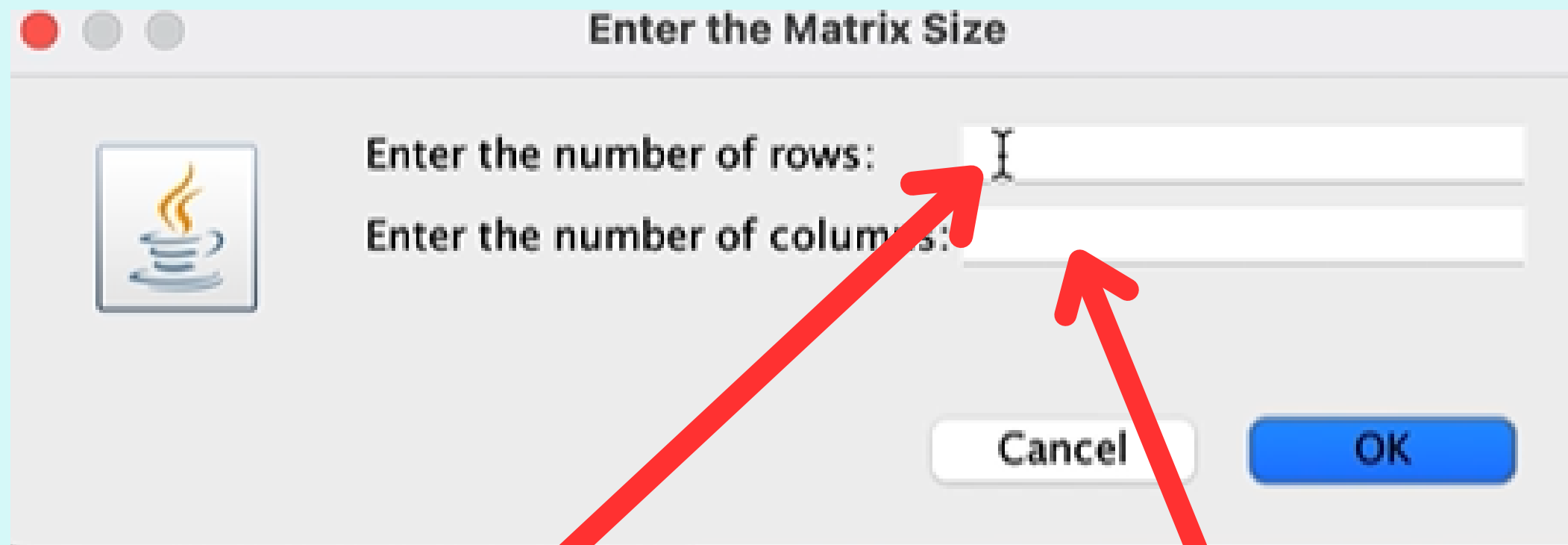
$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$y = mx + b$$



$$V = \frac{4}{3} \pi r^3$$

MATRIX OPERATIONS

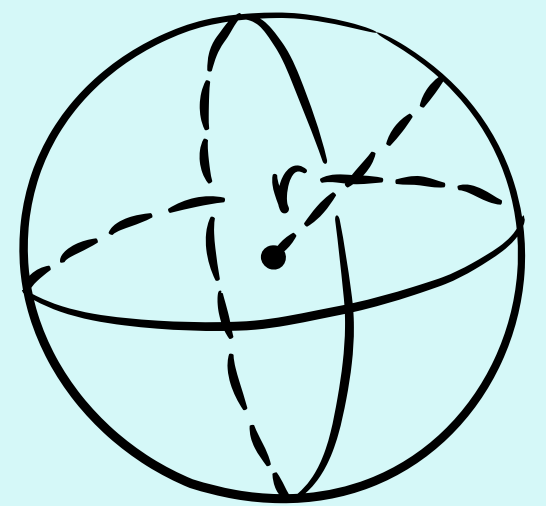


Number of rows

Number of columns


$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$y = mx + b$$



$$V = \frac{4}{3} \pi r^3$$

**Here we asked our program to create 2x2 matrix,
and we fill in the values in the corresponding cells**



Fill in the Matrix Values

Fill in the first matrix values:


| | |
|---|---|
| 1 | 2 |
| 2 | 2 |

Fill in the second matrix values:

| | |
|---|---|
| 1 | 2 |
| 3 | 4 |

Cancel OK

And here are the results!




A window titled "Result Matrix" with a standard macOS-style title bar (red, yellow, and green buttons). The window contains a table with two columns and three rows. The first two rows contain numerical values, and the third row contains a "Close" button. The bottom-right cell of the table is shaded gray and contains a mouse cursor icon.

| | |
|-------|-----|
| 2.0 | 4.0 |
| 5.0 | 6.0 |
| Close | |

**Here we asked our program to create 3x2 matrix,
and and calculate the power value**

Fill in the Matrix and The Power



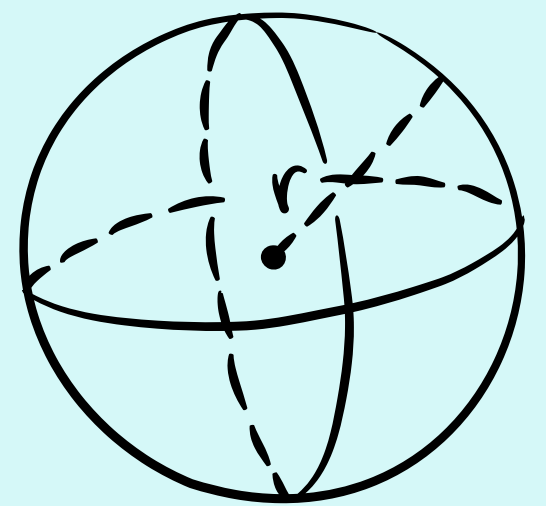
| | | |
|---|---|---|
| 1 | 2 | 3 |
| 3 | 3 | 3 |
| 5 | 6 | 7 |

Enter the power value: 5

Cancel OK

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$y = mx + b$$

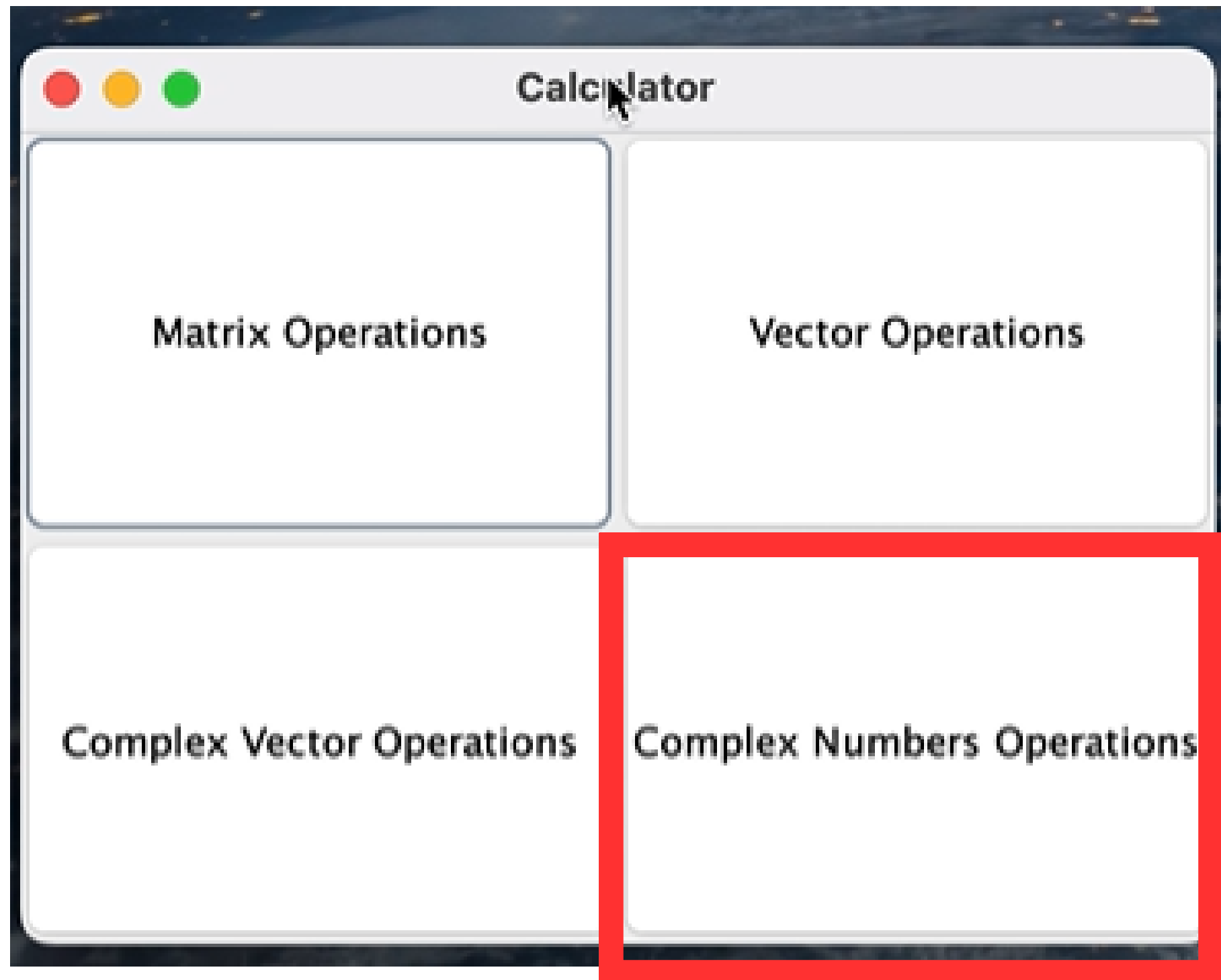


$$V = \frac{4}{3} \pi r^3$$

And here are the results!

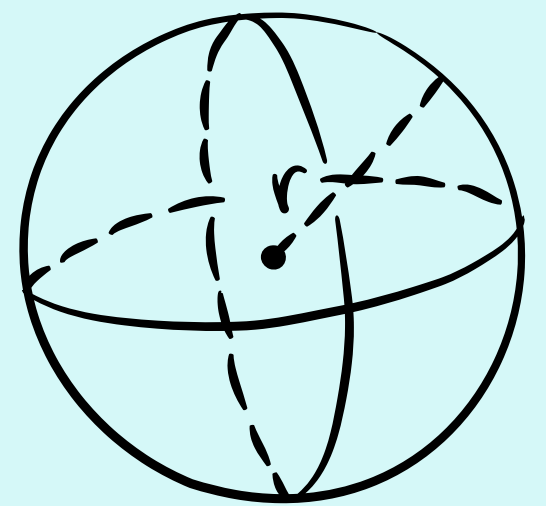
| Result Matrix | | |
|---------------|----------|----------|
| 34186.0 | 41246.0 | 48306.0 |
| 43785.0 | 52827.0 | 61869.0 |
| 92566.0 | 111682.0 | 130798.0 |
| Close | | |

COMPLEX NUMBER OPERATIONS



$$= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$y = mx + b$$



$$V = \frac{4}{3} \pi r^3$$

Complex Numbers Operations

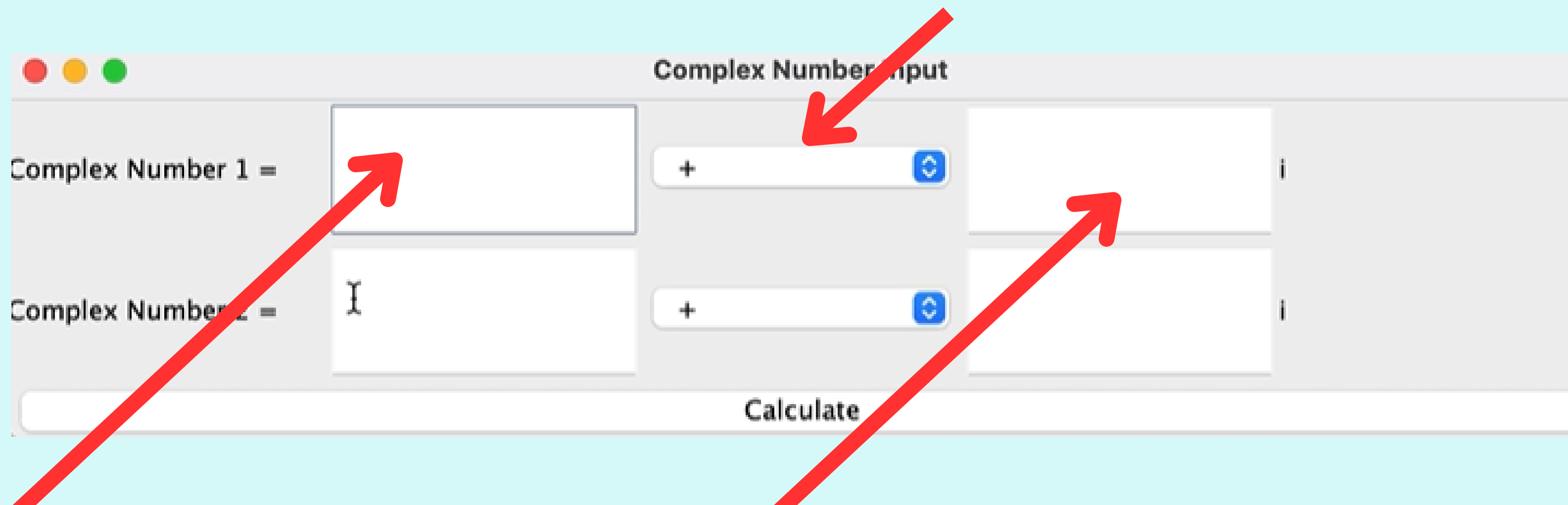
| | |
|-------------------------------|-----------------------------|
| Add | Subtract |
| Multiply | Modulus of a Complex number |
| Conjugate of a Complex number | |

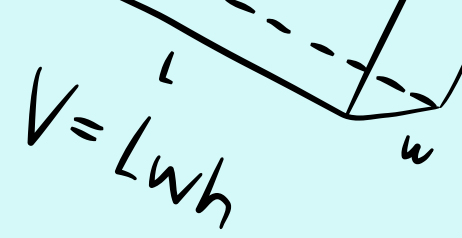
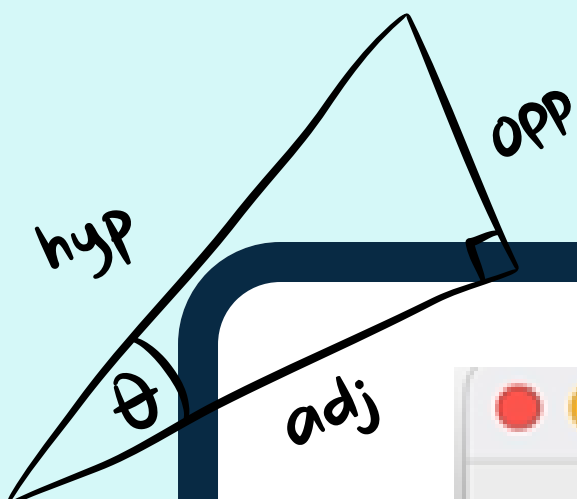
In case of addition

Complex Number Input

Complex Number 1 = + i

Complex Number 2 = + i





$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\sin(\theta) = \frac{\text{opp}}{\text{hyp}}$$

Complex Number Input

Complex Number 1 = 2

-

4

i

Complex Number 2 = 4

+


5

i

Calculate

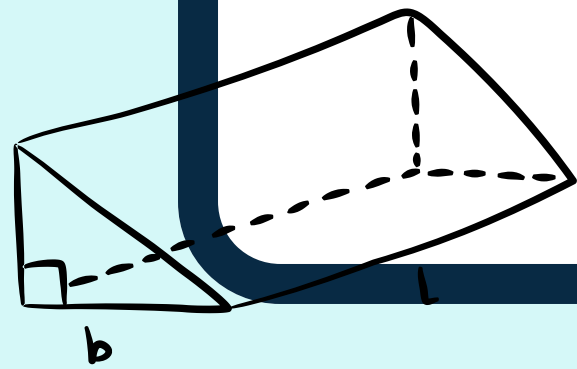
$$mx + b$$

Message



Result: (6.0 + 1.0i)

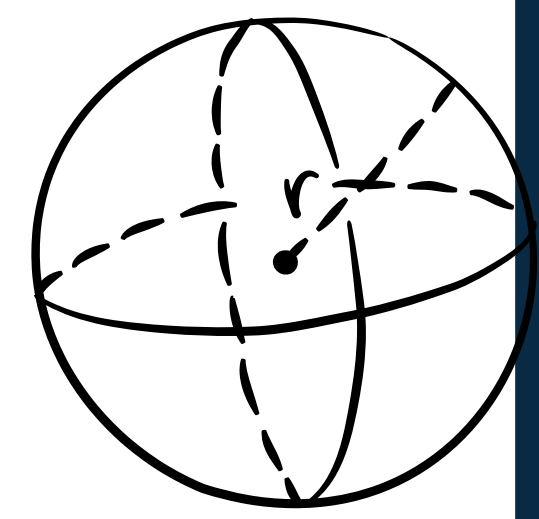
OK



$$V = \frac{1}{2} b h l$$

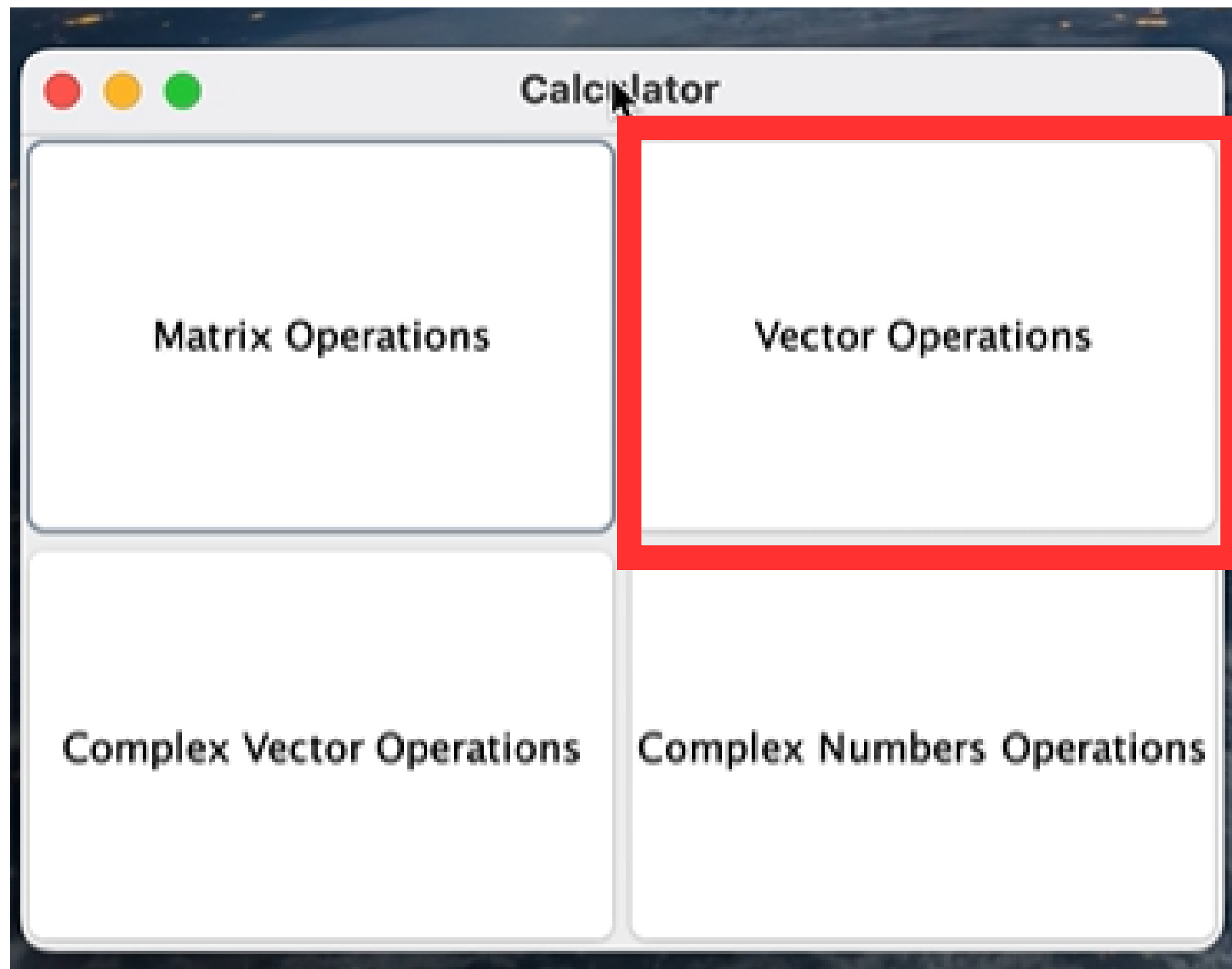
$$\frac{x}{a} + \frac{y}{b} = 1$$

$$ax^2 + bx + c = 0$$



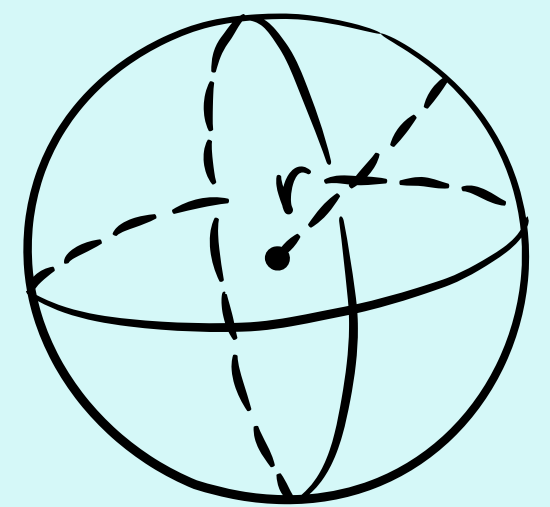
$$V = \frac{4}{3} \pi r^3$$

VECTOR OPERATIONS



$$= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$y = mx + b$$



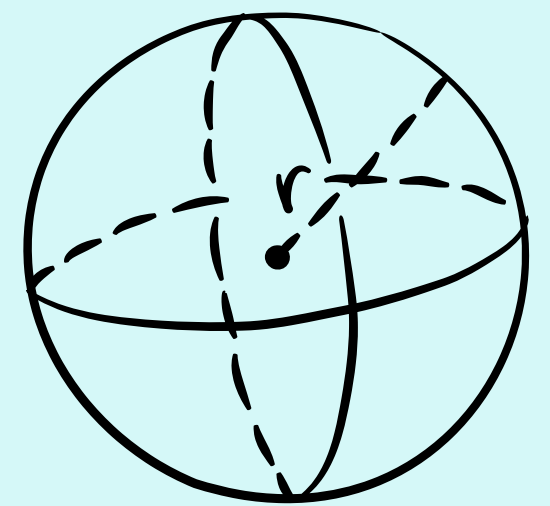
$$V = \frac{4}{3} \pi r^3$$

VECTOR OPERATIONS

| Vector Operations | | |
|---------------------------------|-----------------------------|-----------------------------|
| Add | Subtract | Multiply by a Scalar |
| Calculate Magnitude | Calculate Unit Vector | Dot Product |
| Calculate Angle between Vectors | Calculate Scalar Projection | Calculate Vector Projection |
| Calculate Vector Rejection | Cross Product | Area of a Triangle |
| Are orthogonal? | Are parallel? | |

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$


$$y = mx + b$$



$$V = \frac{4}{3} \pi r^3$$

hyp
 θ

Enter Vectors



Vector 1 (comma-separated values):

Vector 2 (comma-separated values):

Cancel OK


$x^2 - 4ax$

$+b$

$y =$

$a = V_f - V_i$


Message



Result Vector:
[6.0, 8.0, 10.0, 12.0,]

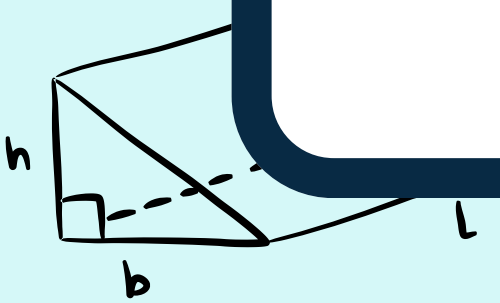
OK

Message



Cannot downcast to Vector3D

OK



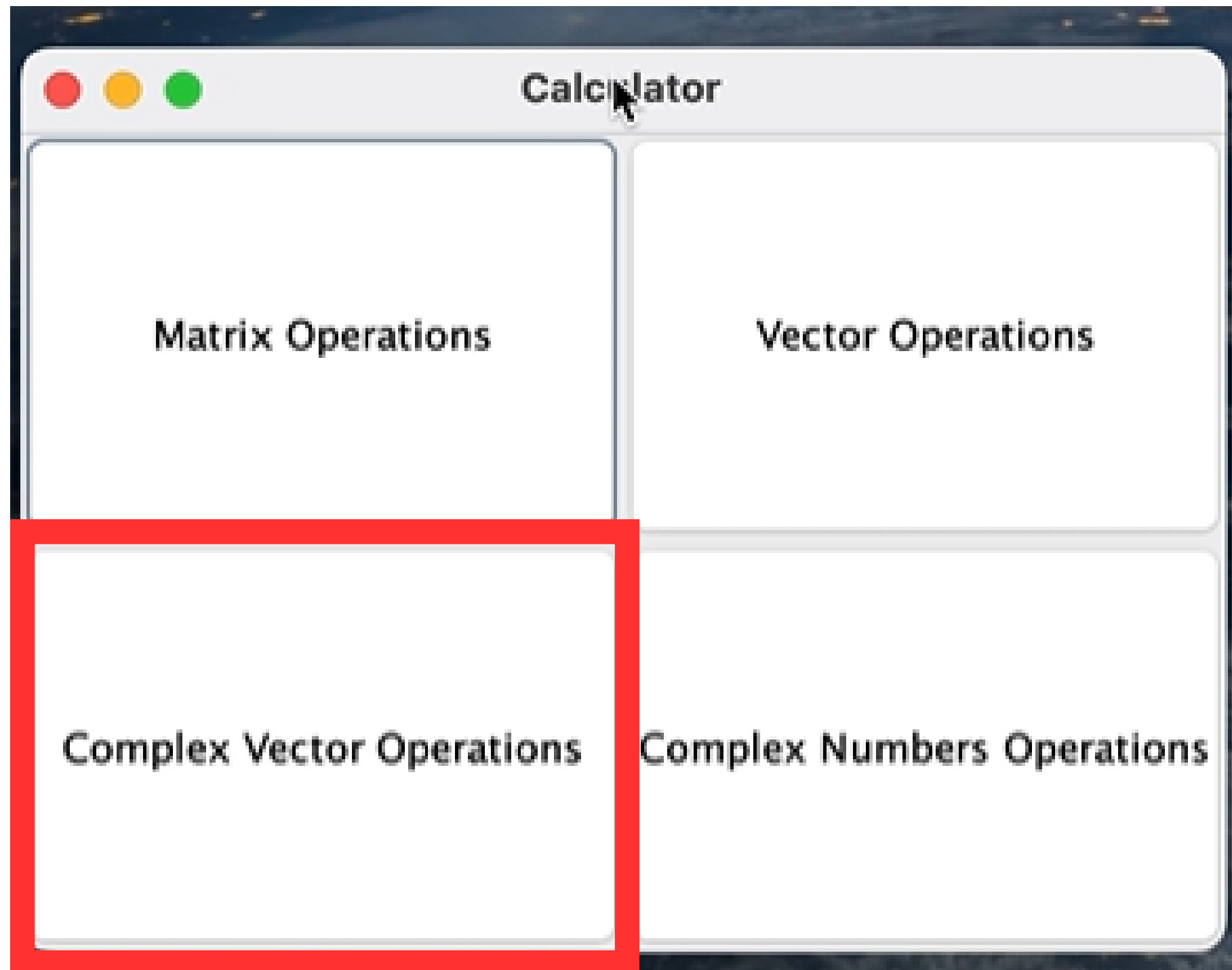
$$V = \frac{1}{2} bhl$$



$$V = \frac{4}{3} \pi r^3$$

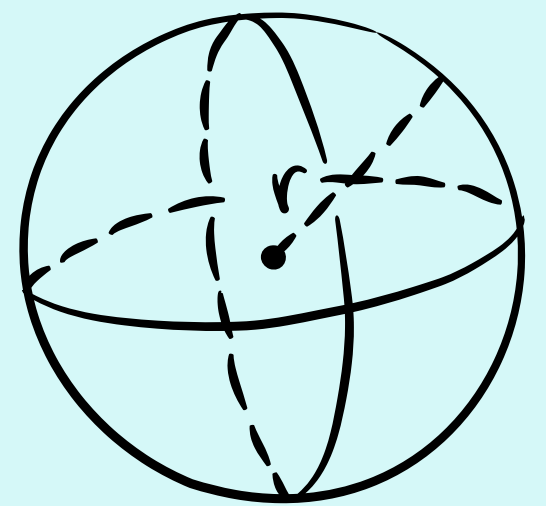
$$ax^2 + bx + c = 0$$

COMPLEX VECTOR OPERATIONS



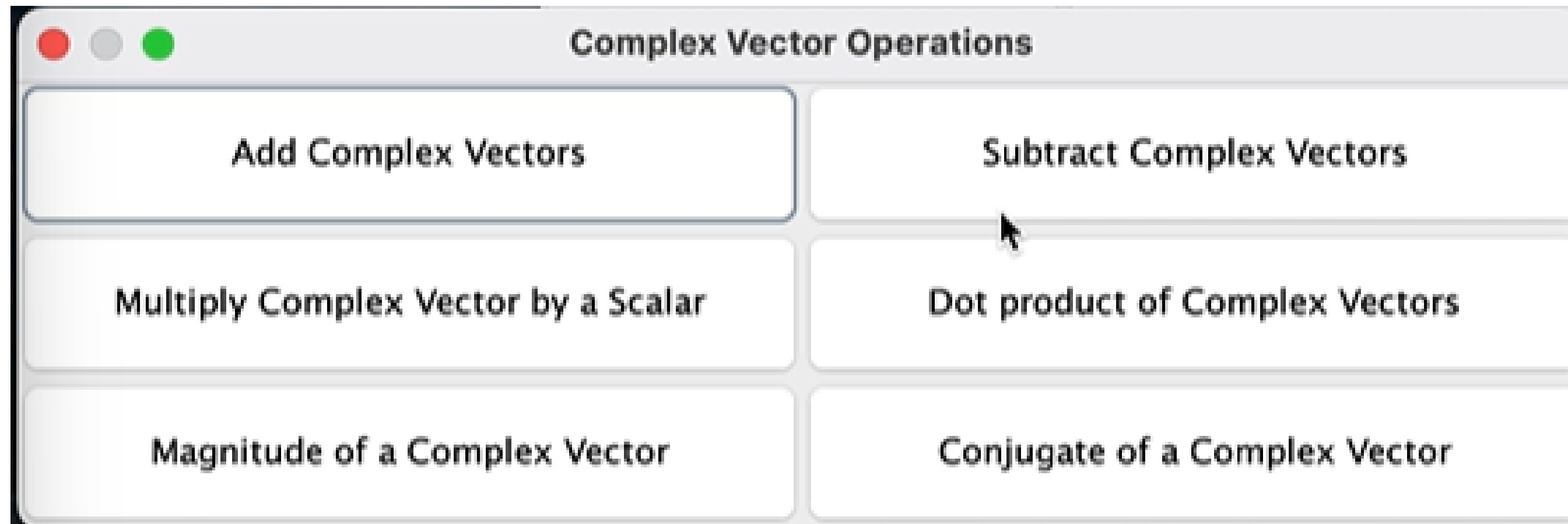
$$= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$y = mx + b$$



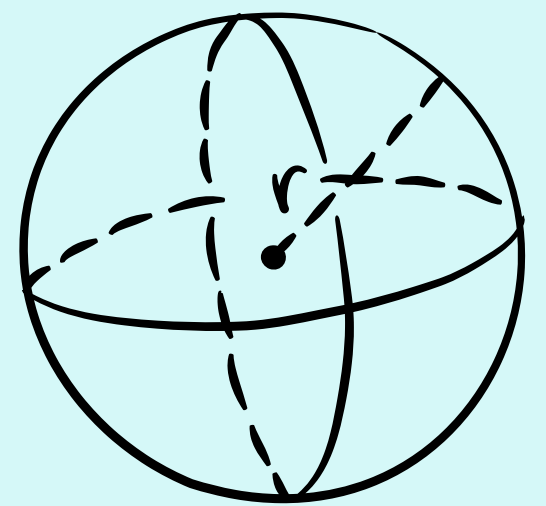
$$V = \frac{4}{3} \pi r^3$$

COMPLEX VECTOR OPERATIONS



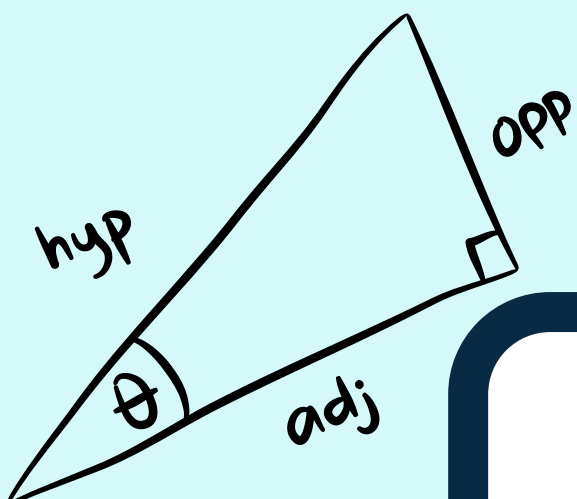
$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$y = mx + b$$



$$V = \frac{4}{3} \pi r^3$$

**THAK YOU FOR THE ATTENTION
AND
FOR THE SEMESTER!**



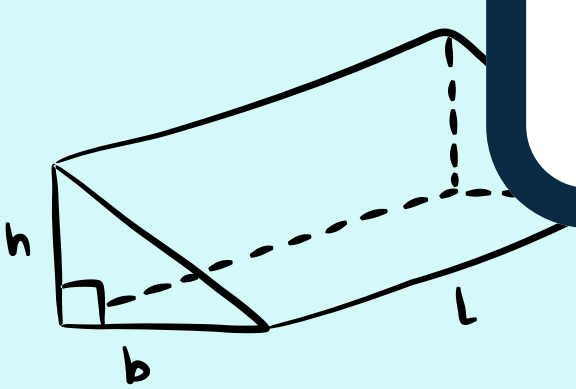
$$\sin(\theta) =$$



$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= mx + b$$

$$a = \frac{V_f - V_i}{t}$$



$$V = \frac{1}{2} bhl$$

$$\frac{x}{a} + \frac{y}{b} = 1$$

$$ax^2 + bx + c = 0$$



$$V = \frac{4}{3} \pi r^3$$