Rhino 8 Lesson01 – The Interface
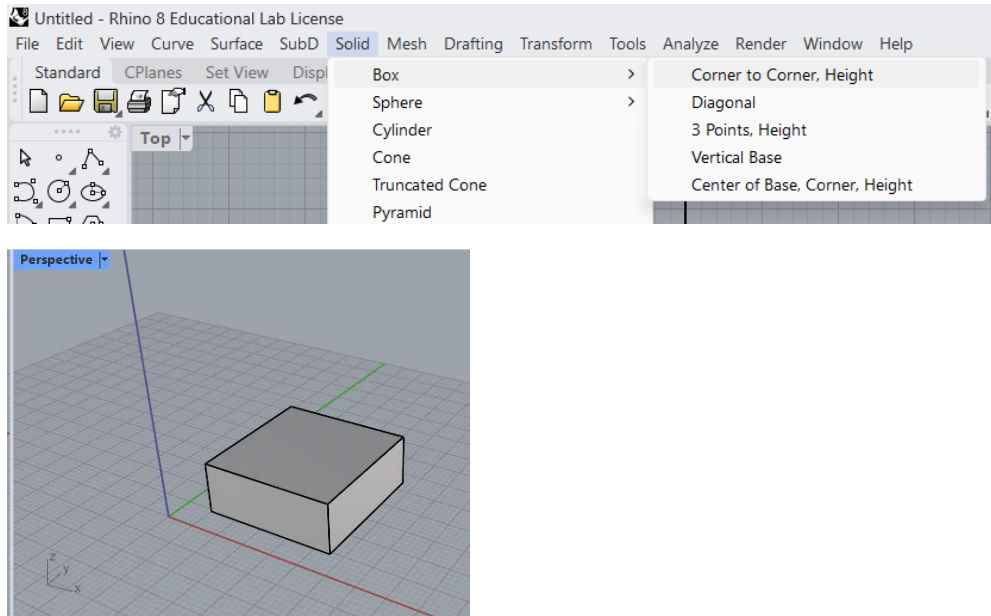
Start Rhino.

Select a template.

Perspective view

Solid > Box > Corner to Corner, Height

Viewports, active view, click view tab to activate view without deselecting objects.
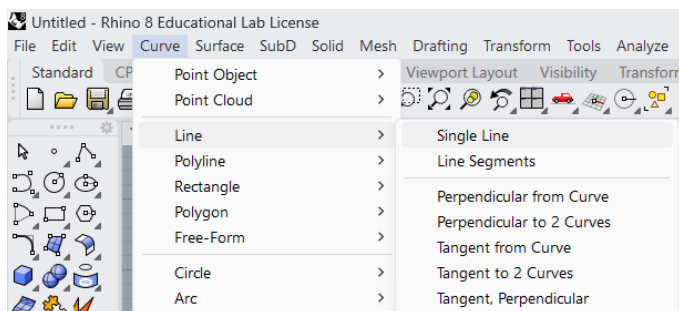
Window title.

Window > Window Layouts > Default window layout

Menu by functions

Curve > Line > Single Line

Curve > Line > Line Segments, Press ENTER to end not ESC.

Finishing a command => Selection tool

Select Objects, Delete, or Del on keyboard, or Edit > Delete

To deselect, click a blank area, or press ESC once => Control lines, twice to deselect.

Transform > Move, to move the whole object or just control lines

You can move using multiple viewports to select objects, specify base point, and displacement.
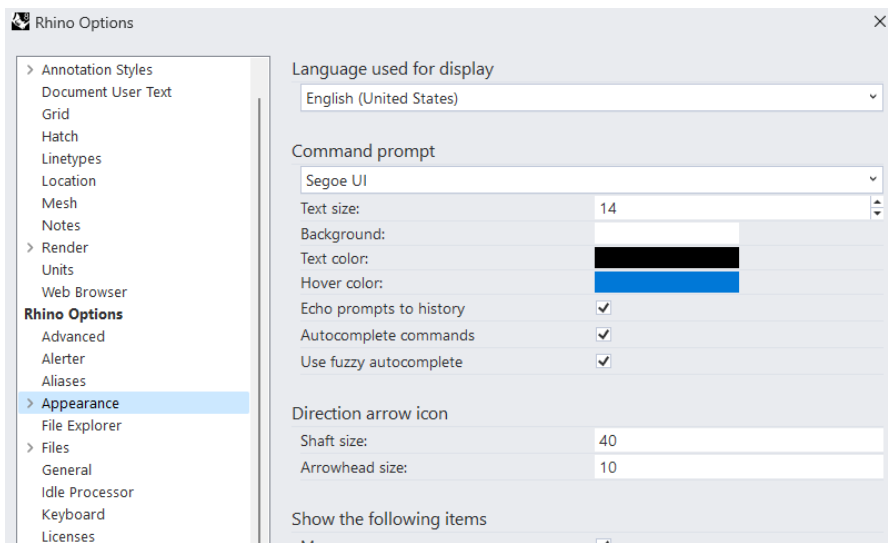
Edit > Undo or CTRL + Z

The Command window
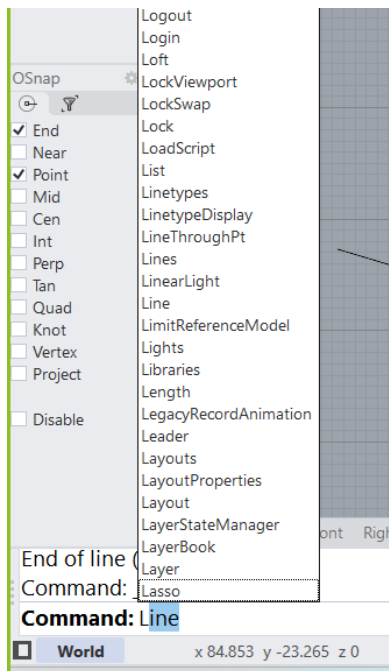
Float, double-click

Dock below viewports

Size

Tools > Options – Appearance: Text size, Uncheck Command prompt, etc.

Line command, ENTER, SPACEBAR, Right-click

Lines command

Line

F2

ComputerHope.com

Autocomplete, Left select command in list, or start typing and press ENTER

Command Options, select or type key

Circle   Center, radius

                2P

                3P

F1 for help

CTRL + A = Erase All, Del

Shortcuts:

        L = Lines

        D = Delete

        M = move

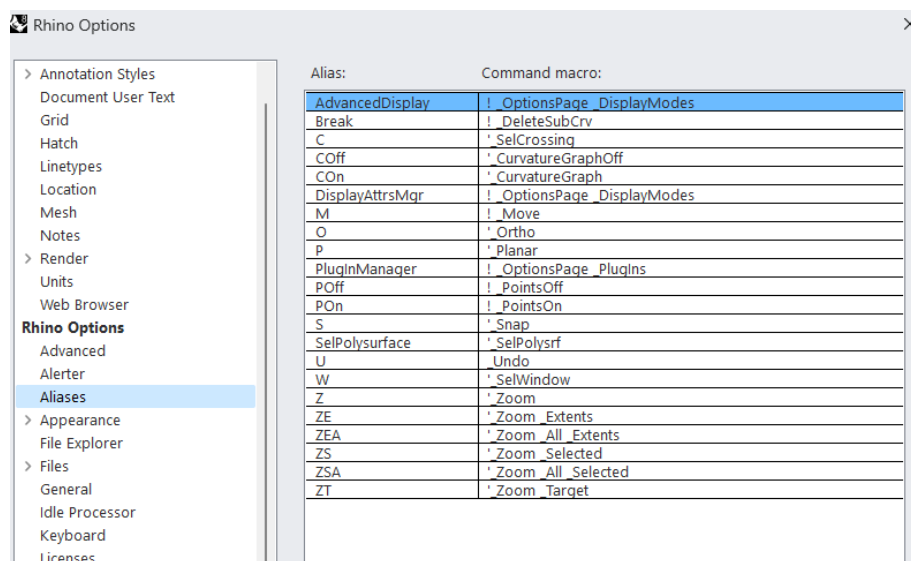   Z = Zoom

        ZE = Zoom extents
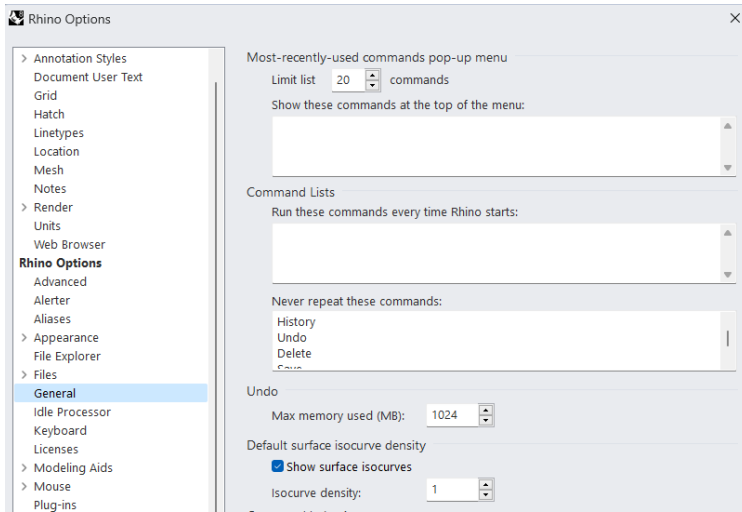
        U = undo

        O = Ortho on/off

Tools > Options – Aliases

To repeat last command: ENTER, SPACEBAR or right-click

List of commands that do not repeat: Tools > Options > General

Right-click command window to view recent commands (Max 20 – Options: General)
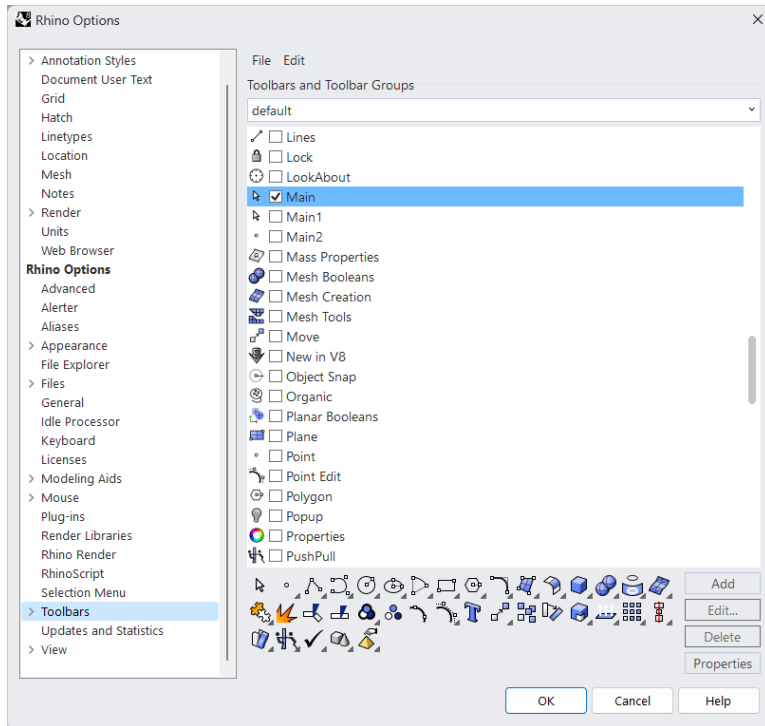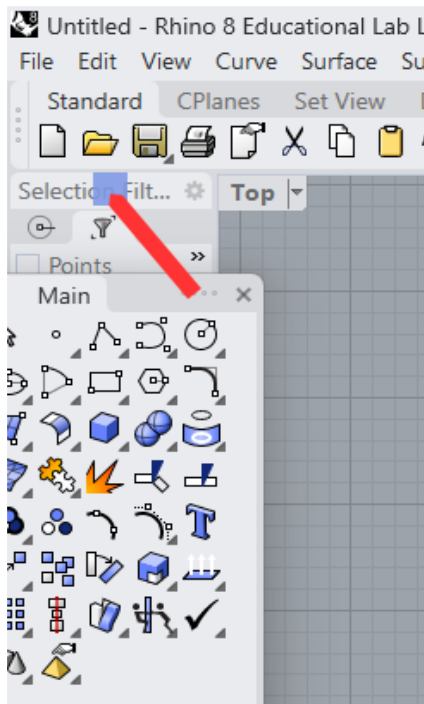
Sidebar
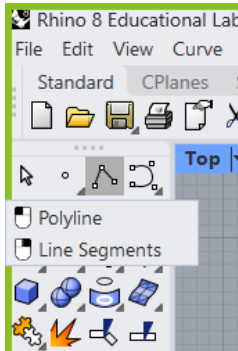
Floating

Closing

Tools > Options – Toolbars
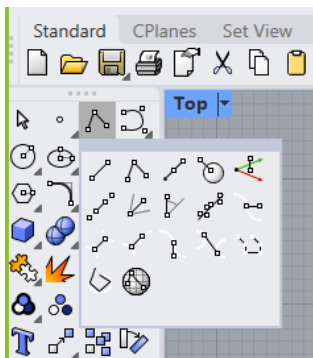
Docking

Double-click title

Standard toolbar

Tooltips: Left or right-mouse button
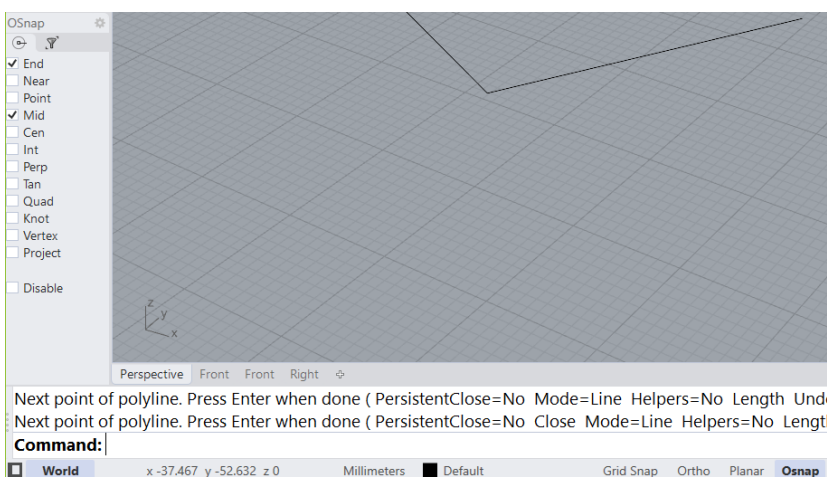
Triangle => Cascading toolbar which you can float

Viewports

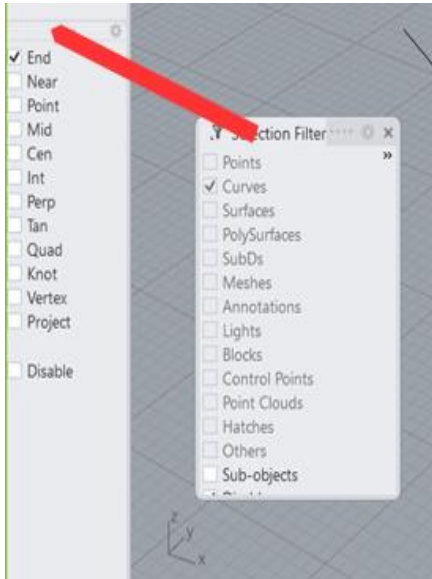Activate, Resize, Maximize, Rename, Right-click for menu or click triangle

Maximize, then use viewport tabs to switch between viewports

View > Viewport Layouts

Object snaps

If you floated the Filter panel, drag it back by the tab name not the …. To place it next to Osnap.

The Status bar, hiding the side menus, the coordinate system, x,y,z ccordinates, units,

Panels: Properties, Layers, Display (curves, Grid)

                 Help + Auto-update

Window > Window Layouts > Save

Mouse Actions

Navigation:

Rotate View in Perspective views: Click and hold the right mouse button (RMB) and move the mouse.

Pan View in Perspective views: Shift + RMB, then move the mouse.

Pan view in parallel views: RMB.

Zoom View: Scroll the mouse wheel up or down to zoom in or out.

Selection:

Select Object: Left-click on the object.

Select Multiple Objects: Hold down the SHIFT key while clicking on additional objects. Use CTRL to deselect.

Select Objects in a Window: Drag a selection window (from left to right) around the objects you want to select. Only objects completely enclosed by the window will be selected.

Select Objects in a Crossing Window: Drag a selection window (from right to left) around the objects you want to select. Objects intersected or enclosed by the window will be selected.

Editing:

Move Object: Select the object, then click and drag with the left mouse button.

View Manipulation:

Change Viewport: Click on one of the viewport tabs (Top, Perspective, Front, Right, etc.) at the top of the Rhino window.
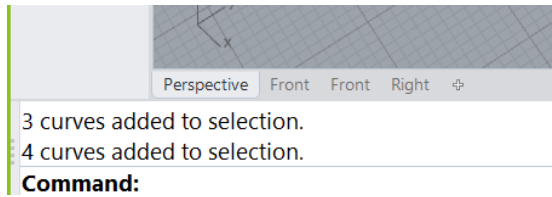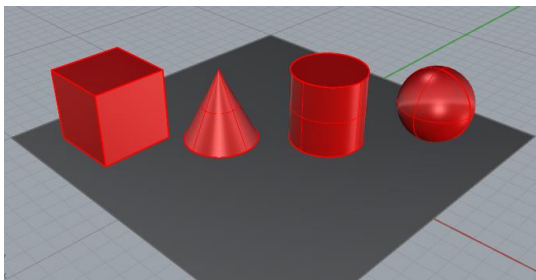

Maximize Viewport: Double-click on a viewport tab to maximize it. Double-click again to restore.

Getting Started
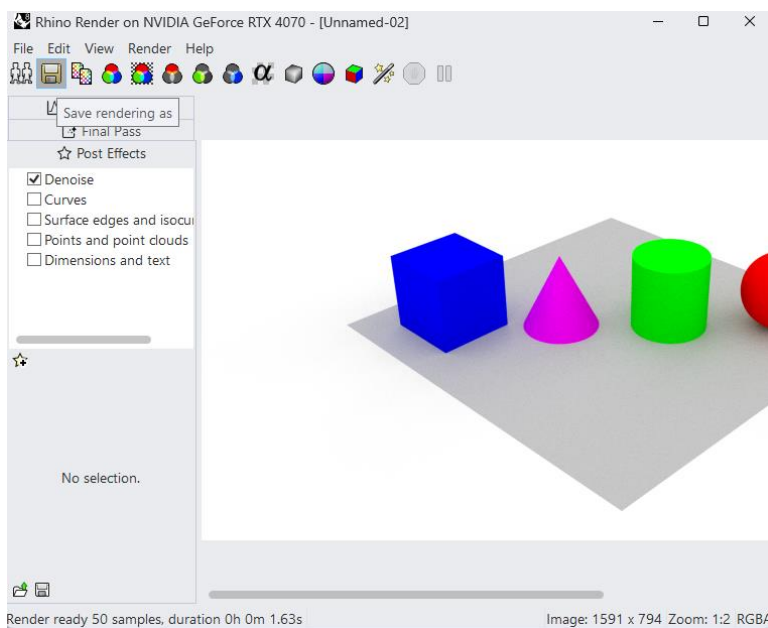
Open the file Start.3dm

View > Viewport Layout > 4 Viewports

Status bar, units, Grid Snap on

Perspective view, Shaded

Render > Render

Save the image

Close the Render window

Orbit with RMB

X-Ray

Ghosted

Rendered

Technical Artistic

Pen

Wireframe

Navigating

In Perspective view, SHIFT + RMB to pan

In other views, drag with RMB button to pan

Roll the wheel to zoon in and out

CTRL + RMB to zoom in and out

ZE ENTER to zoom Extent or View > Zoom > Zoom Extents

View > Zoom > Zoom Extents All

Move Objects

Gumball off, Drag

Grid snap on, drag => Moves on view grid

Grid settings, use Analyze > Distance to verify grid settings

Start dragging, tap ALT to copy (Don't hold down the ALT key). The tap should quick to work.

Copy Objects

ESC

Transform > Copy

Select object, press ENTER to repeat copy

Gumball

Gumball actions

- Drag gumball arrows to Move the object.
- Drag scale handles *(squares)* to Scale the object in one direction.
- Drag arcs to rotate the object.
- Tap the Alt key after starting to drag to toggle copy mode.
- Click a control handle to enter a numeric value.
- Hold the Shift key during Scale to force 3-D scale.

Gumball Controls

① Axis plane indicator
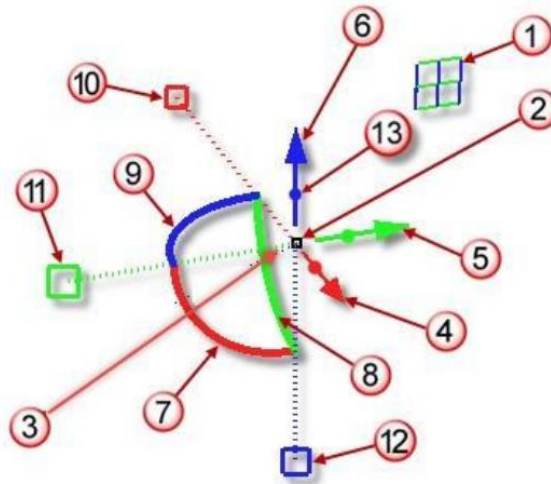② Free move origin
③ Menu location

Move arrows
④ Move X
⑤ Move Y
⑥ Move Z

Rotation arcs
⑦ Rotate X
⑧ Rotate Y
⑨ Rotate Z

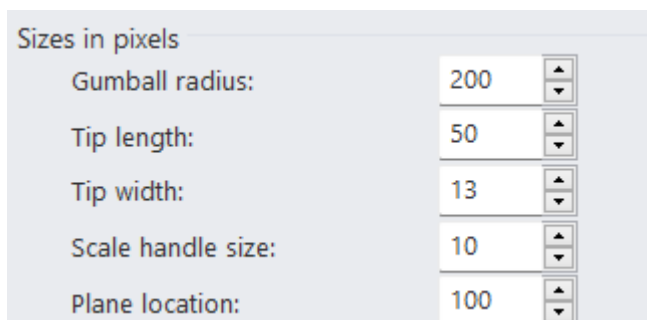**Scale handles**
⑩ Scale X
⑪ Scale Y
⑫ Scale Z
⑬ Extrude Z

Gumball On, Grid snap off

Right-click Gumball > Settings, increase radius to 200

Sizes in pixels

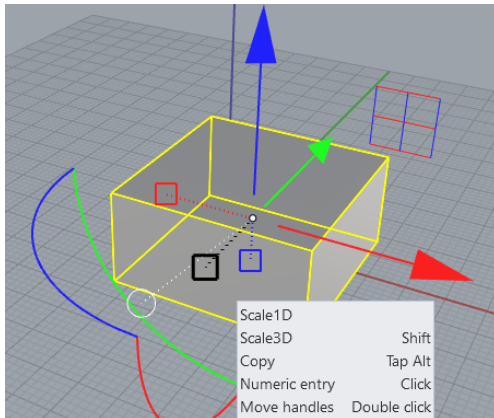|	
Gumball radius:	200
Tip length:	50
Tip width:	13
Scale handle size:	10
Plane location:	100

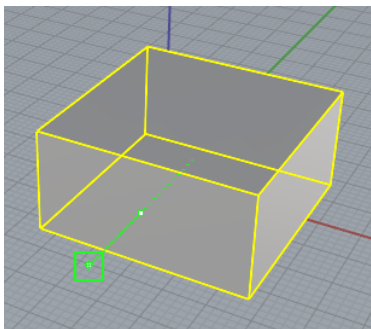Drag arrow to move

Click arrow to set distance
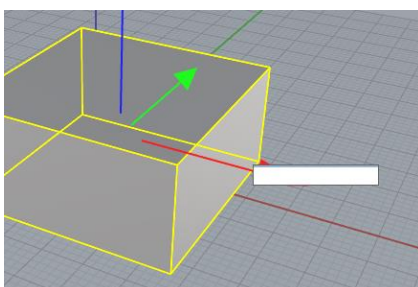
To place the object on the origin, Snap on, Center, Move, to 0,0

Scale using handles

Double-click handle to stretch it

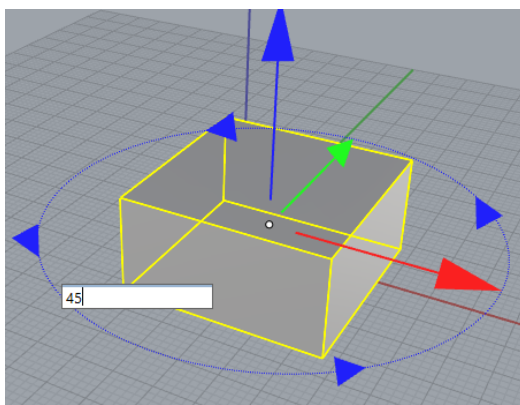Click inside handle to enter a scale value, 2 => two times

Use Analyze > Distance with snap to check values

SHIFT scale to scale in all directions

Start moving, tap ALT to copy

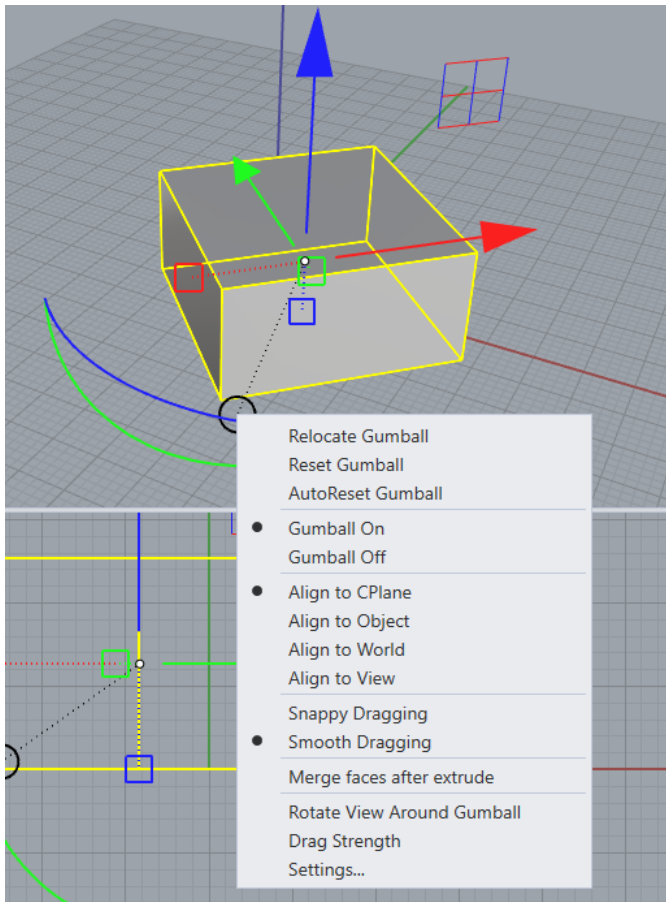Drag arcs to rotate, better in parallel views

Click arc to enter degree

RGB = XYZ

Rotate the box

Click menu handle to align Gumball with World axis

Use the Axis plane indicator to move or scale in the indicated plane. Rotate the view to display other planes.
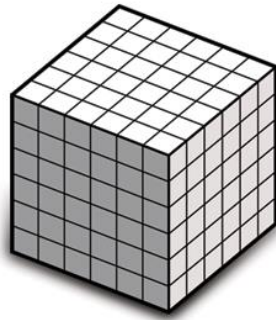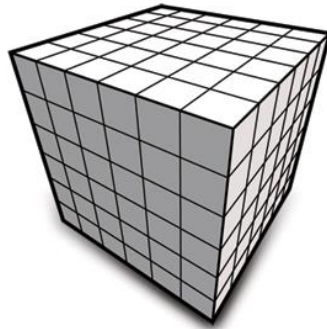
Use menu to relocate Gumball and Reset

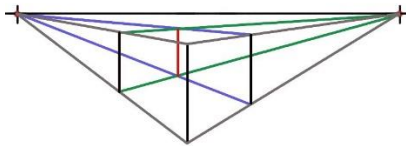**Parallel Vs. Perspective Projection**

Perspective view (One point perspective)

Right-click Title > Viewport Properties

Change Projection

2-Point Perspective

Pan and Zoom

Use Arrow keys on keyboard to rotate view

Use CTRL + arrow keys to pan

Page up/ Page down to zoom in and out

Home to undo view change

End to redo view change

View > Set view > Plan

View > Set view > Perspective

View > Zoom > Extents, …

Right-click view name > Set View > …

Display Options

Open Camera.3dm

In Perspective view experiment with arrow keys.

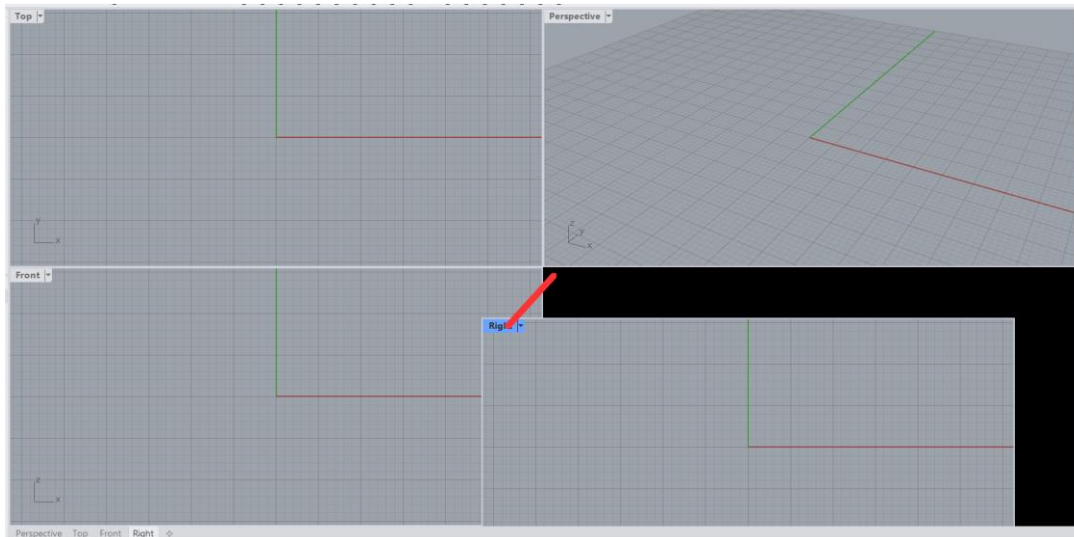Right-click Top view title > Viewport Layout > Split Horizontal

Split the Front and right view vertical

Right-click view title > Set view,…

View > Zoom >…

Double-click view title to maximize/restore

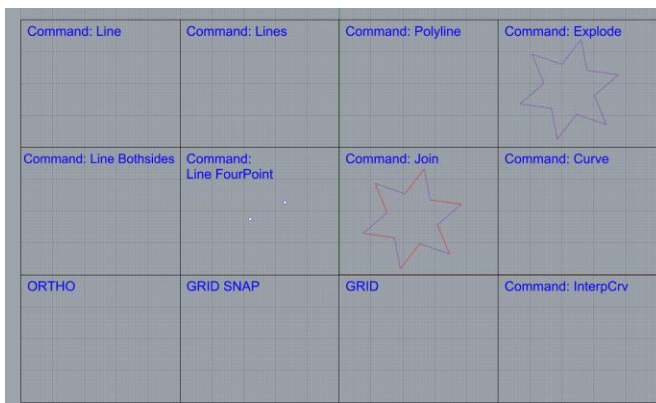View > Viewport layout > Float

Close viewport

Resize viewport

View > Viewport layout > 4 viewports

Hide left sidebar – Button in the bottom left corner

Hide right side bar

Start Drawing

Open the file **Practice with Lines.3dm**

All line and polylines in rhino are curved geometry

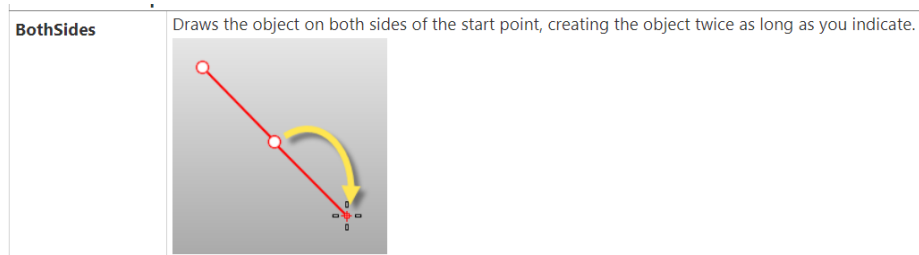Use help to understand command options and menu location
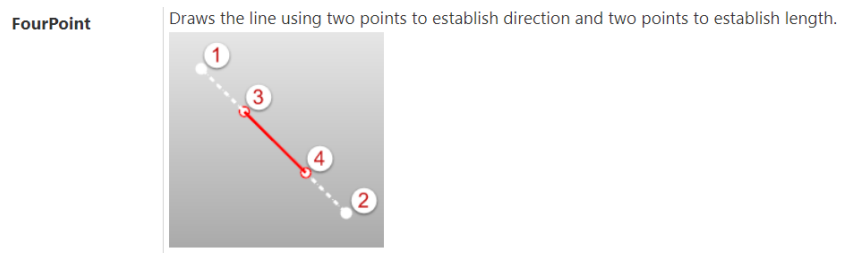
Curve > Line >…

Curve > Polyline > …

Edit > Explode

Edit > Join

Curve > Free-Form > Control points

Line – Bothsides

Line – FourPoint

Save As

Open the file ring and practice the above