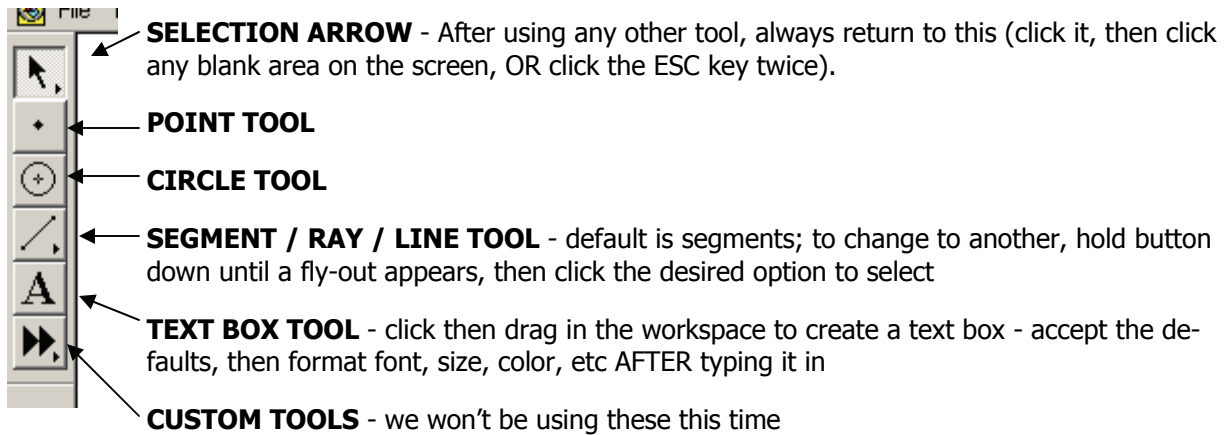


TRANSFORMATIONAL GEOMETRY with *Sketchpad* - Aide-Memoire



Make a new page in the file	File > Document Options > Add Page [<i>Duplicate...</i> or <i>New Page</i>]
Select a lot of objects (Marquee select)	Click in the workspace, above and to the left of the top leftmost object; click and drag down and to the right until all desired objects are selected (turn pink)
Do a drag test on a polygon	Click and drag on each vertex separately. The adjoining sides should stay together. Use "Undo" to return your polygon to its previous shape.
Rotate at a vertex	Double-click the desired vertex (you should see a "flower" appear briefly); select the entire object; Transform > Rotate > [Set angle] > Rotate. <i>Leave object selected if you wish to repeat the rotation.</i>
Rotate at a point	Make a point to act as center of rotation and double-click it to mark it as center of rotation; select the object to rotate then proceed as for rotation at a vertex.
Reflect an object	Draw a segment to act as a mirror; select the entire segment (end points as well as segment); double-click to mark it as mirror (you should see a pair of squares briefly flash on/off); Transform > Reflect
Translate an Object by Distance	Select entire object; Transform > Translate > [Select the "Rectangular" radio button then enter the two desired distances] > Translate
Translate an Object by Vector	Draw a segment to act as the vector; select the entire segment (including end points); Transform > Mark Vector Select object to translate; Transform > Translate > [Select the "Marked" radio button] > Translate
How to keep your sanity	SAVE after every operation, no matter how insignificant
Quick Keyboard Shortcuts	CTRL + Z = Undo CTRL + X = Cut CTRL + C = Copy CTRL + V = Paste ESC (twice) = return to Selection Arrow control and clear selected items CTRL + A = Select all CTRL + S = Save