HAND DRAWING AN ELLIPSE
SOLIDWORKS CONSTRUCTION

Start with a 4" x 4" x 4" cube

Draw a centered circle with a 3" diameter on the front face.
SOLIDWORKS CONSTRUCTION

Note that the circle becomes an Ellipse in the Isometric view.

Cut (extrusion cut) the drawn circle through the cube
HAND SKETCHING AN ELLIPSE

To create a hand drawn ellipse on the cube, first size and locate the boundary of the ellipse and then draw the diagonals as shown. Draw a vertical and a horizontal line through the diagonal intersection points to create the ellipse tangent points.
HAND SKETCHING AN ELLIPSE

Bisect the upper left portion of the diagonal. Bisect the remaining portion of the diagonal.
HAND SKETCHING AN ELLIPSE

Repeat the process for the lower right portion of the diagonal. These “white” points will determine the boundaries for the ellipse.*

Draw the arcs as shown below.

* Note that the above “white” points will be at $\frac{3}{4}(.75)$ of the half diagonal when the exact location $= \frac{1}{(2^{.5})} = .7071$
HAND SKETCHING AN ELLIPSE

Draw the arcs as shown below.

Compare Hand Drawn Ellipse with SOLIDWORKS CONSTRUCTION.