

Distance and Midpoint Formulas

Enter the following points into the **STAT** lists in your calculator in the order in which the points are listed: $(-40,-25)$ $(-30,15)$ $(25,30)$ $(15,-10)$ $(-40,-25)$ $(25,30)$, $(15,-10)$ $(-30,15)$

Plot these points on your calculator and connect them. Draw a sketch of the screen output and label the coordinates of each vertex of the figure, letting $A = (-40,-25)$, $B = (-30,15)$ $C = (25,30)$, and $D = (15,-10)$

Using the distance formula, find the length of each of the four sides of the figure. **Show your work.**

length of side AB

length of side BC

length of side CD

length of side DA

The line segments connecting the opposite vertices of the figure are called diagonals. Find the midpoint of each diagonal. **Show your work.**

Midpoint of diagonal AC

Midpoint of diagonal BD

Write some conclusions about the sides of the figure and about the diagonals of the figure.