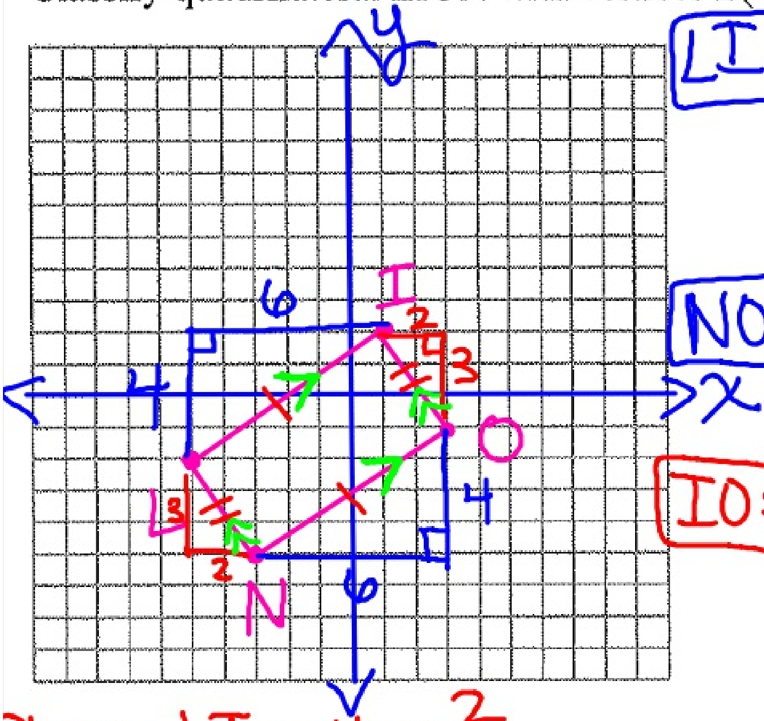
Given the vertices of a quadrilateral, it can be classified by characterizi
You start by calculating the length and slope of each side.

Classify quadrilateral LION with vertices L(–5, –2), I(1, 2), O(3, –1), N(–3,



$\boxed{LI:}$ $4^2+6^2=LI^2$
$16+36=LI^2$
$\sqrt{52}=\sqrt{LI^2}$
$\sqrt{52}=LI$

$\boxed{NO:}$ $4^2+6^2=NO^2$
$\sqrt{52}=NO$

$\boxed{IO:}$ $2^2+3^2=IO^2$
$4+9=IO^2$
$\sqrt{13}=\sqrt{IO^2}$
$\sqrt{13}=IO$

$\boxed{LN:}$ $2^2+3^2=LN^2$
$\sqrt{13}=LN$

Slope: $LI=\frac{4}{6}=\frac{2}{3}$
$NO=\frac{4}{6}=\frac{2}{3}$
$LN=\frac{-3}{2}$
$IO=-\frac{3}{2}$

The quadrilateral is a rectangle
perpendicular
because $LN \perp NO$ and $IO \perp LI$,
$LI \parallel NO$ and $LN \parallel IO$, and
opposite sides are congruent
$(LI=NO=\sqrt{52}\ ;\ LN=NO=\sqrt{13})$.