

Parallelogram
 - opp sides \parallel
 - opp sides \cong

Rhombus
 - all sides \cong

Rectangle
 - consecutive sides \perp

To prove parallelogram
 Slope $4x$ or
 distance $4x$
 distance $4x$
 Slope $4x$

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Square
 - all sides \cong
 - consecutive sides \perp

To prove a square:
 distance $(4x)$
 Slope $(4x)$ AND \perp

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Quad LAWN is a square since all 4 sides are \cong and consecutive sides are \perp forming right \angle s.

$LA = \sqrt{(3-0)^2 + (6-5)^2} = \sqrt{10}$
 $AW = \sqrt{(4-3)^2 + (3-6)^2} = \sqrt{10}$
 $WN = \sqrt{(4-1)^2 + (3-2)^2} = \sqrt{10}$
 $LN = \sqrt{(1-0)^2 + (2-5)^2} = \sqrt{10}$

$m_{LA} = \frac{6-5}{3-0} = \frac{1}{3}$
 $m_{AW} = \frac{3-6}{4-3} = -3$
 $m_{WN} = \frac{3-2}{4-1} = \frac{1}{3}$
 $m_{LN} = \frac{2-5}{1-0} = -3$

$\left. \begin{matrix} m_{LA} = \frac{1}{3} \\ m_{WN} = \frac{1}{3} \end{matrix} \right\} \text{neg. rec.}$
 $\left. \begin{matrix} m_{AW} = -3 \\ m_{LN} = -3 \end{matrix} \right\} \text{neg. rec.}$

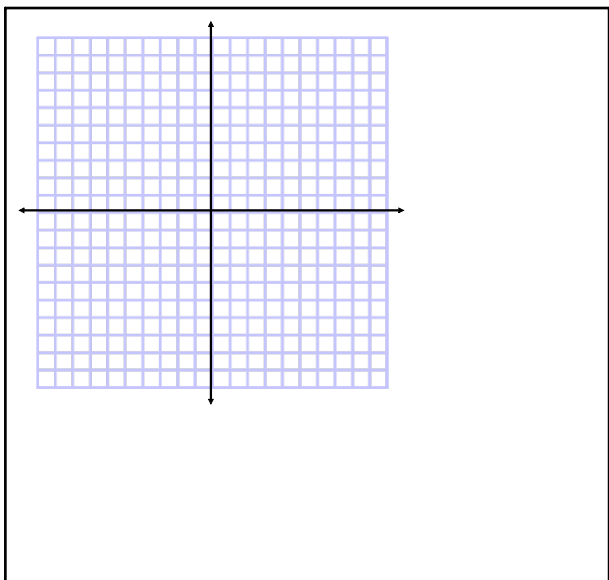
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Quad INDY is a square since all 4 sides are \cong and consecutive sides are \perp forming right \angle s.

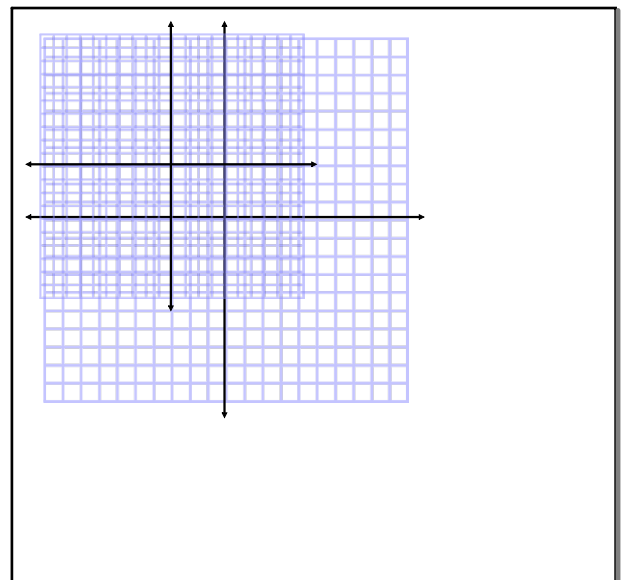
$IN = YD = IY = ND = \sqrt{34}$

$m_{IN} = \frac{7-4}{4-1} = \frac{3}{3} = 1$
 $m_{YD} = \frac{2-(-1)}{7-2} = \frac{3}{5}$
 $m_{ND} = \frac{2-7}{7-4} = -\frac{5}{3}$
 $m_{IY} = \frac{-1-4}{2-1} = -5$

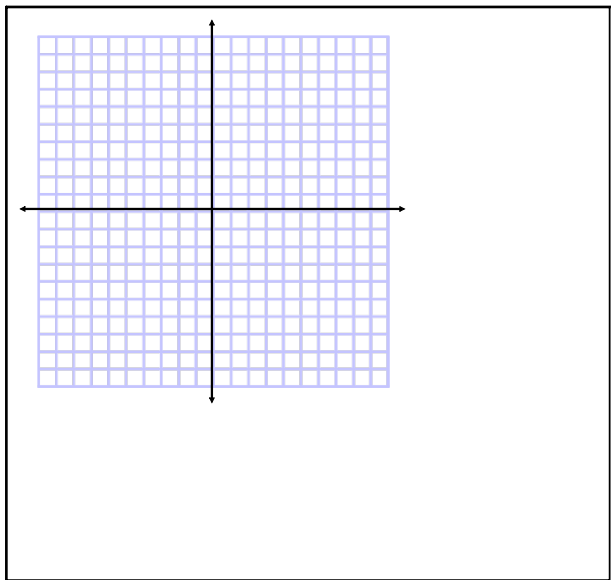
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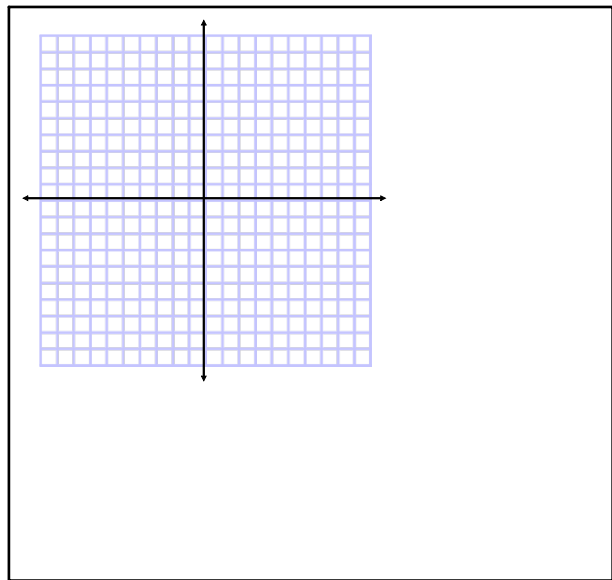
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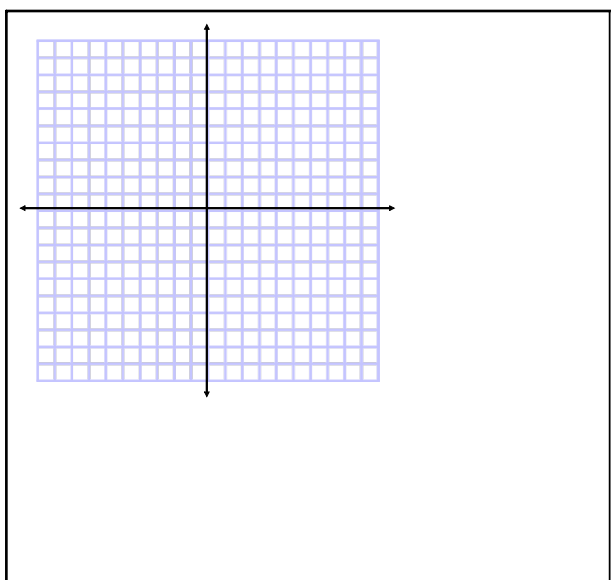
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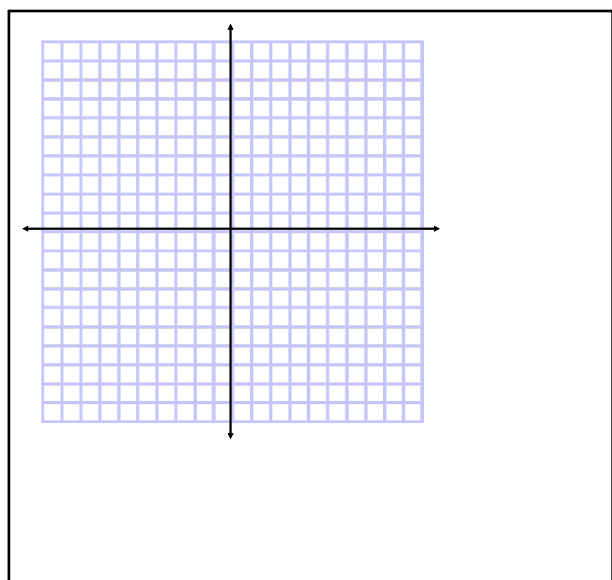
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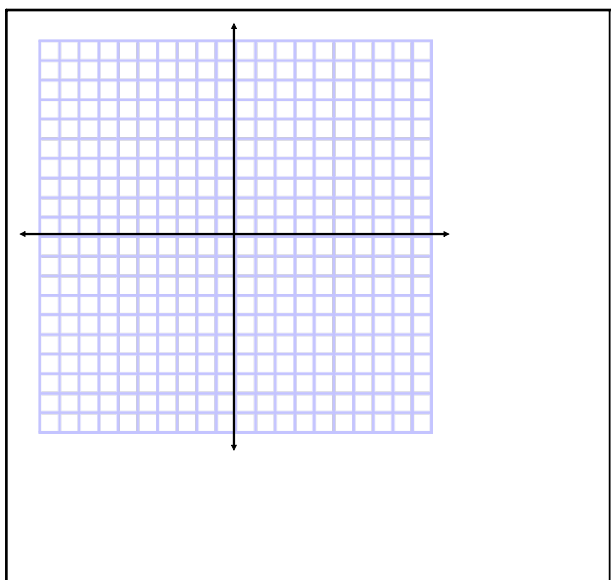
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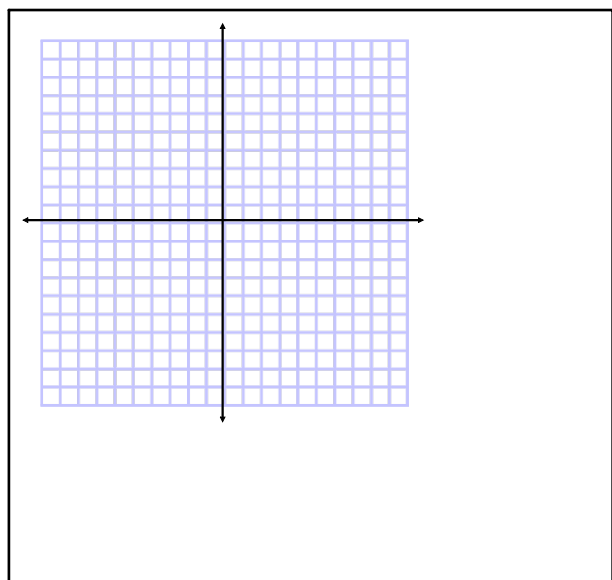
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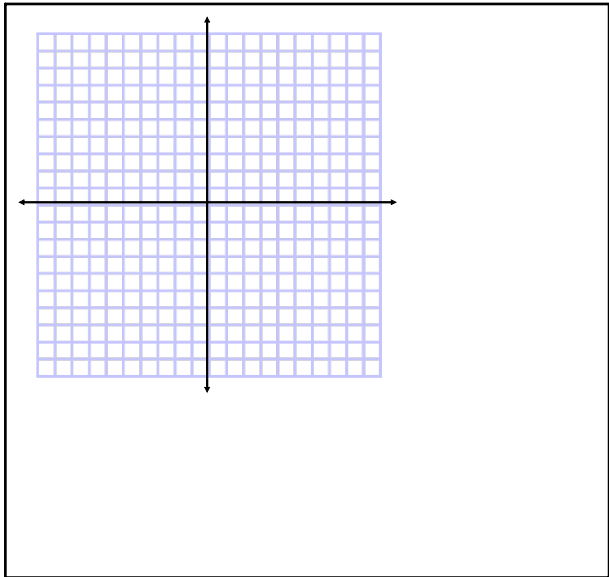
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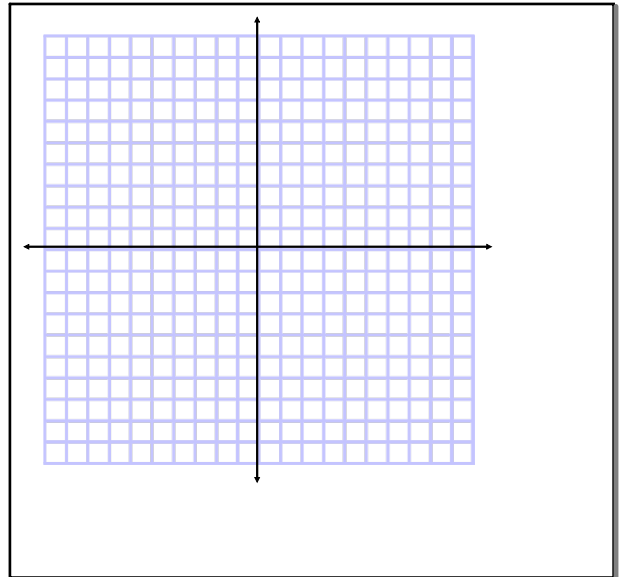
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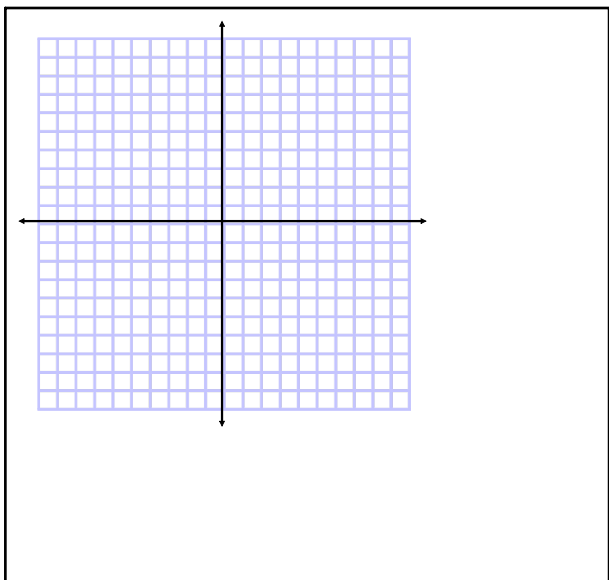
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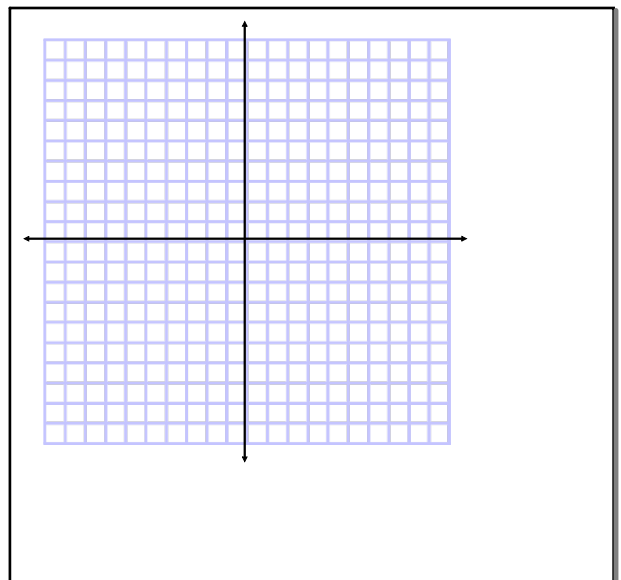
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