

Friday 2/14/2020

1. Begin Friday Warm-Up

2. Proving Parallelogram Notes



Oct 23-7:39 AM

Name: _____ Date: _____ Block: _____ Warm-Up Week #6

Thursday rule: $(x,y) \rightarrow (-x,-y)$

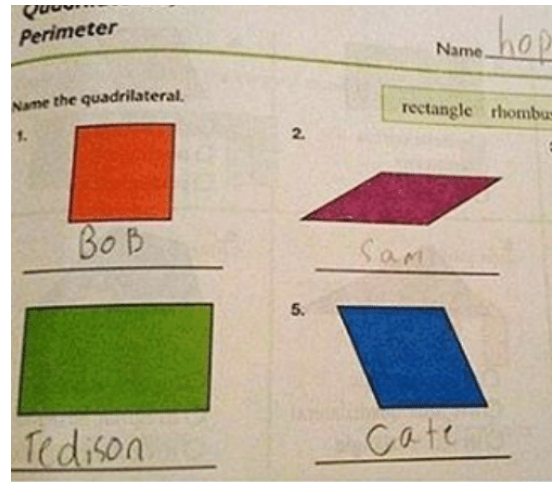
Find the measure of each angle in the triangle: $180 - 14 + 4 = 12 = 2 \cdot 6$ $x + 12 = 74$ $x = 62$	Sketch a 180° rotation [Diagram showing a point (x,y) rotating to (-x,-y) on a coordinate plane]	Find the value of x below: [Diagram showing a line with slope 3 and y-intercept -4 intersecting a horizontal line at y=100] $100 = 13x - 4$ $104 = 13x$ $x = 8$
Solve for x. [Diagram showing a triangle with angles x+35 and x-35] $2x + 35 = x + 35$ $x = 0$	Solve for x and y in the figure: [Diagram showing a quadrilateral with angles 6x-4, 49, 13, and 3x] $49 = 9x - 7$ $56 = 9x$ $x = 6$	Find m∠E [Diagram showing a right triangle with angles 90x and 91x] $90x = 91x$ $-x = 1$ $x = -1$

Friday $K=D$ $P=Y$

Solve for the value of x. $9x + 5 = 8x + 15$ $x = 10$	Solve for x in the triangle: $180 = 14 + 35 + 11 + x$ $180 = 126 + x$ $x = 54$	What rule translates a figure two units to the right? A(x,y) → (x+2,y) B(x,y) → (x,y+2) C(x,y) → (x-2,y) D(x,y) → (x,y-2)
Solve for x. [Diagram showing a trapezoid with angles 75x+1 and 104°] $75x + 1 + 104 = 180$ $75x + 105 = 180$ $105 = 75$ $x = 1$	Solve for x. SC = 12 CU = 2x - 4 [Diagram showing a triangle with sides SC=12, CU=2x-4, and another side of length 12] $2x - 4 = 12$ $2x = 16$ $x = 8$	

Skills Check

1. Finish yesterday's skill check (7 minutes).



Name the quadrilateral 😊

Aug 6-6:36 PM

What am I learning today?

Learning Objective 2A.7

How to prove all types of parallelograms on the coordinate plane

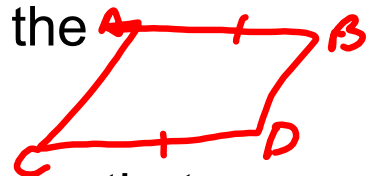
Jul 31-6:18 PM

Characteristics of ALL Types of Parallelograms:

- Parallelogram - Opposite sides are congruent and parallel
- Rhombus - ALL sides are congruent and opposite sides are parallel
- Rectangle - Opposite sides are congruent and parallel, all angles are 90°
- Square - ALL sides are congruent and opposite sides are parallel, all angles are 90°

Feb 5-4:28 PM

Proving Congruent Sides - Find the DISTANCE



Proving Parallel Sides - Find slopes that are the SAME

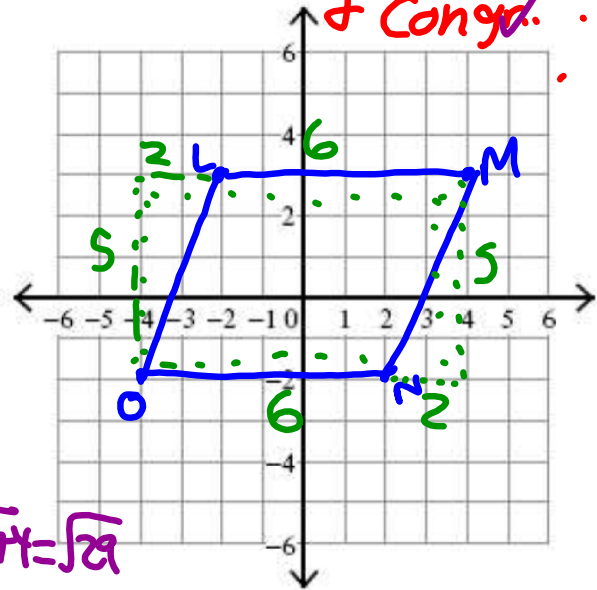
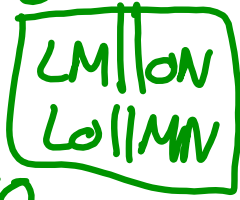
Proving Right Angle - Find slopes that are OPPOSITE RECIPROCALS



Feb 5-4:28 PM

1. Prove that the quadrilateral with the coordinates L(-2, 3), M(4, 3), N(2, -2), and O(-4, -2) is a **parallelogram**. *Opp. sides para. & Congru.*

Slope = $\frac{\text{rise}}{\text{run}}$
 $LM = \frac{0}{6} = 0$
 $LO = \frac{5}{2}$
 $ON = \frac{0}{6} = 0$
 $MN = \frac{5}{2}$



Sides
 $LM = 6$ $LO = \sqrt{5^2 + 2^2} = \sqrt{25+4} = \sqrt{29}$
 $ON = 6$ $MN = \sqrt{5^2 + 2^2} = \sqrt{29}$
 $LM \cong ON$ $LO \cong MN$

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2. Prove a quadrilateral with vertices W(1, 1), X(5, 3), Y(4, 5), and Z(0, 3) is a **rectangle**. *Opp. Sides para. Cong. & 90°*

Slopes
 $ZY = \frac{2}{4} = \frac{1}{2}$ $WX = \frac{2}{4} = \frac{1}{2}$
 $ZW = \frac{-2}{1} = -2$ $YX = \frac{-2}{1} = -2$

$ZY \perp YX$
 $WX \perp XZ$

$ZY \parallel WX$
 $ZW \parallel YX$



Sides
 $ZY = \sqrt{2^2 + 4^2} = \sqrt{4+16} = \sqrt{20} = 2\sqrt{5}$
 $ZW = \sqrt{-2^2 + 1^2} = \sqrt{4+1} = \sqrt{5}$
 $WX = \sqrt{4^2 + 2^2} = \sqrt{16+4} = \sqrt{20} = 2\sqrt{5}$
 $YX = \sqrt{2^2 + 1^2} = \sqrt{4+1} = \sqrt{5}$

$YZ \cong ZW$
 $ZY \cong WX$

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3. Prove a quadrilateral with vertices G(-3, 1), H(1, 4), I(1, -2), and J(5, 1) is a **rhombus**.
 • All sides Congruent ✓
 • Opp. Sides Parallel ✓

Sides

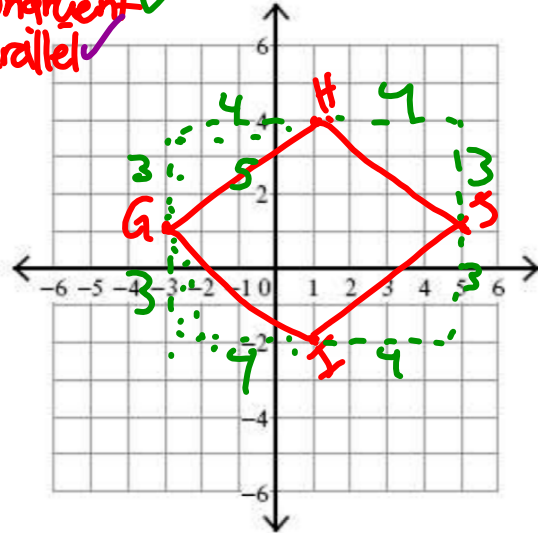
$$GH = \sqrt{3^2 + 4^2} = \sqrt{9 + 16} = \sqrt{25} = 5$$

$$GI = \sqrt{3^2 + 4^2} = 5$$

$$IJ = \sqrt{3^2 + 4^2} = 5$$

$$HI = \sqrt{3^2 + 4^2} = 5$$

$$GH \cong GI \cong IJ \cong HI$$



Slope

$$GH = \frac{3}{4} \quad IJ = \frac{3}{4}$$

$$GI = \frac{-3}{4} \quad HI = \frac{-3}{4}$$

$$\begin{matrix} GH \parallel IJ \\ GI \parallel HI \end{matrix}$$

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4. Prove that the quadrilateral with vertices A(-1, 0), B(3, 3), C(6, -1), and D(2, -4) is a **square**.
 All sides \cong ✓
 opp. Sides \parallel ✓
 90° angles ✓

Sides

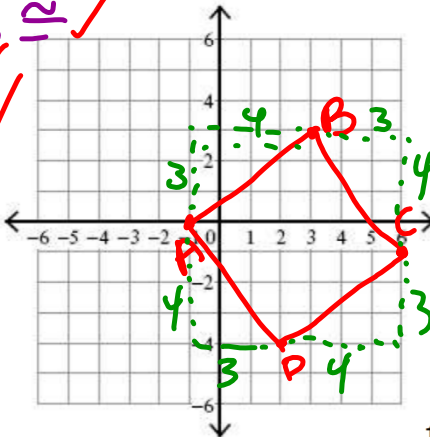
$$AB = \sqrt{3^2 + 4^2} = \sqrt{9 + 16} = \sqrt{25} = 5$$

$$AD = \sqrt{3^2 + 4^2} = 5$$

$$DC = \sqrt{3^2 + 4^2} = 5$$

$$BC = \sqrt{3^2 + 4^2} = 5$$

$$AB \cong AD \cong DC \cong BC$$



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Slope

$$AB = \frac{3}{4} \quad DC = \frac{3}{4}$$

$$AD = \frac{-4}{3} \quad BC = \frac{-4}{3}$$

$$\begin{matrix} AB \parallel DC \\ AD \parallel BC \end{matrix}$$

$$\begin{matrix} AB \perp AD \\ DC \perp BC \end{matrix}$$

Classwork:

Complete the classwork about proving parallelograms on a coordinate plane.
SHOW ALL WORK!

HW: Finish the packet and start studying for your Unit 2A Quiz 2 (Monday after Break!)

Oct 26-8:19 AM