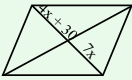


Warm - Up

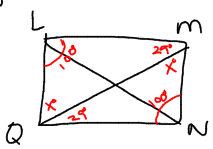
1. List all 5 properties of a parallelogram. Put HW on your desk

2. This is a parallelogram. Find X.



Dec 1-11:56 AM

D2HW #13-16



$100 + x + 29 + 100 + 29 + x = 360$

$258 + 2x = 360$

$2x = 102$

$x = 51^\circ$

$\angle LQN$
 $51 + 29 = 80^\circ$

Jan 9-7:37 AM

Unit 7: Quadrilaterals

7.3: Show that a Quadrilateral is a Parallelogram

Dec 2-8:49 AM

To Prove that a Quadrilateral is a Parallelogram...

If you can show that one of the five reasons mentioned are true then you can say that the figure is a parallelogram.

Dec 2-8:56 AM

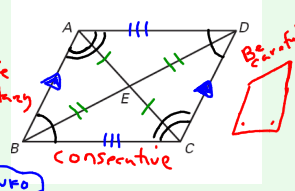
Or....Show that this is true...

If one pair of opposite sides of a quadrilateral are parallel and congruent then the quadrilateral is a parallelogram.

Dec 2-10:39 AM

Decide whether each piece of given information alone is sufficient to prove that quadrilateral ABCD is a parallelogram.

- E is the midpoint of AC and BD. *yes diagonals bisect*
- $m\angle ABC + m\angle BCD = 180^\circ$. *yes! consecutive supplementary*
- $AB \parallel DC$ and $BC \cong DA$. *Not Same Side NOT ENOUGH INFO*
- $\angle ABC \cong \angle ADC$ and $\angle BAD \cong \angle BCD$. *ADD! BOTH opp \angle 's \cong*



Dec 2-8:57 AM

On a coordinate plane, there are three methods to show that 4 points for a parallelogram:

Method 1: Show that opposite sides are parallel
 Show lines have same slope $\frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x}$

Method 2: Show that opposite sides have the same length
 Use distance formula $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Method 3: Show that one pair of opposite sides are congruent and parallel.

...Just choose ONE...

Dec 2-8:57 AM

Let's Try Method 1:
 Show that opposite sides are parallel.

Show that A(-1, 2), B(3, 2), C(1, -2) and D(-3, -2) are the vertices of a parallelogram.

BOTH PAIRS

Slope AD = $\frac{2}{1}$ **yes!**
 Slope BC = $\frac{2}{1}$ **yes!**
 Slope AB = 0 **yes!**
 Slope DC = 0 **yes!**

Dec 2-8:57 AM

Let's Try Method 2:
 Show that opposite sides have the same length.

Show that W(3, -1), X(4, 2), Y(1, 5), Z(0, 2) are the vertices of a parallelogram.

$d_{ZY} (0,2) (1,5)$
 $d = \sqrt{(1-0)^2 + (5-2)^2}$
 $d = \sqrt{1+9} = \sqrt{10}$

$d_{WX} (3,-1) (4,2)$
 $d = \sqrt{(4-3)^2 + (2+1)^2}$
 $d = \sqrt{9+9} = \sqrt{18}$

$d_{XY} (4,2) (1,5)$
 $d = \sqrt{(5-2)^2 + (1-4)^2}$
 $d = \sqrt{9+9} = \sqrt{18}$

$d_{ZW} (0,2) (3,-1)$
 $d = \sqrt{(3-0)^2 + (-1-2)^2}$
 $d = \sqrt{9+9} = \sqrt{18}$

Dec 2-8:58 AM

Let's Try Method 3:
 Show that one pair of opposite sides are parallel and have the same length.

Show that Q(0, 1), R(4, 4), S(12, 4), T(8, 1) are the vertices of a parallelogram.

RS & QT are || and have length 8 yes!

Dec 2-8:58 AM

Try these on your graph paper by any method you choose. You must show your work to prove yes or no.

- A(1,4), B(5, 4), C(6, 1), D(2, 1)
- A(1, 0) B(2, 4) C(6, 5) D(5, 1)
- A(-4, 3) B(1, 1) C(-1, -3) D(-5, -1)

Feb 4-2:56 PM

Homework: Pg 381 1-20

QUIZ next class!!!

Feb 8-1:57 PM



Feb 10-8:06 AM