

Unit 10 Lesson 8: Proving Trapezoids on the Coordinate Plane

Proving **TRAPEZOIDS** on the Coordinate Plane!



DO NOW: Please list below the 2 properties of a trapezoid:

1. _____
2. _____

Super! Now, can you list the properties of an *isosceles trapezoid*?

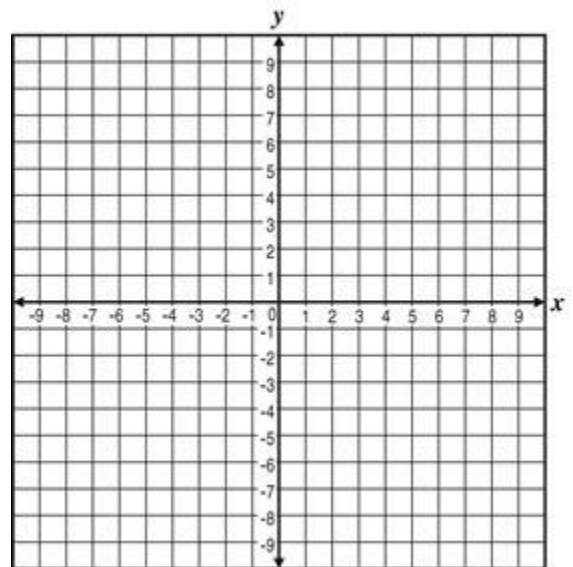
1. _____
2. _____
3. _____
4. _____

Let's jump right into some practice.

1. The vertices of quadrilateral JULI are J(-1,1), U(3,4), L(7,2), and I(-1,-4).

Prove: JULI is a trapezoid.

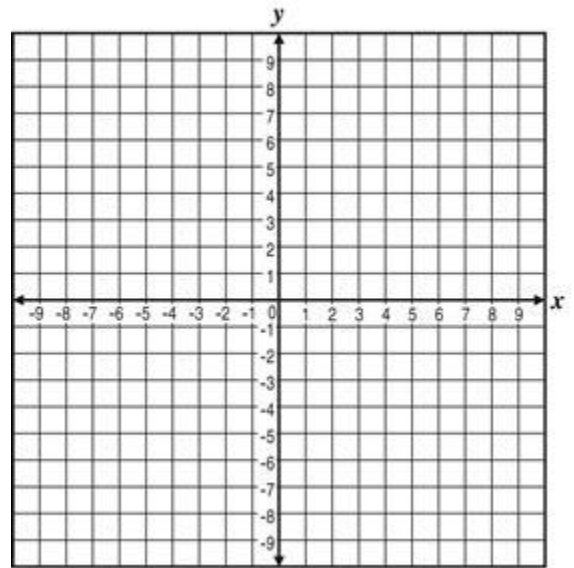
JULI is not an isosceles trapezoid.



Ah ha! Now you can see that in order to complete coordinate plane proofs with trapezoids, you are going to need to use the _____ **twice** and the _____ **twice**.

2. The vertices of quadrilateral KINS are $K(1,-4)$, $I(10,-4)$, $N(9,2)$, and $S(2,2)$.

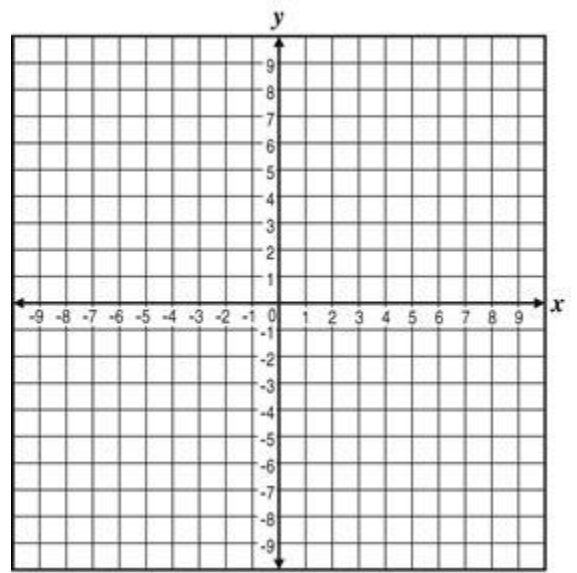
Prove that quadrilateral KINS is an isosceles trapezoid.



3. The vertices of quadrilateral ABCD are $A(1,-2)$, $B(13,4)$, $C(6,8)$, and $T(-2,4)$. Prove that quadrilateral ABCD is a trapezoid but not an isosceles trapezoid.

4. The vertices of quadrilateral EFGH are $E(1,3)$, $F(-1,1)$, $G(-1,-2)$, and $H(4,3)$.

Prove that quadrilateral EFGH is an isosceles trapezoid.



5. The vertices of quadrilateral LMNO are $L(1,5)$, $M(4,7)$, $N(7,3)$, and $O(1,-1)$.

a) Prove that LMNO is a trapezoid.

b) Prove that LMNO is not isosceles.

