Geometry CC – Mr. Valentino Name: _____

Unit 10 Lesson 9: Proving Triangles on the Coordinate Place Date: _____ Per: _____

Lastly, we have…**TRIANGLES** on the Coordinate Plane

Do Now: Answer the following questions.

1. What makes a triangle a **right** triangle?

_____

How do we prove that a right angle exists on the **coordinate plane** (which formula is going to be the most useful)?

_____

2. What makes a triangle an **isosceles** triangle? How about an **equilateral** triangle?

_____

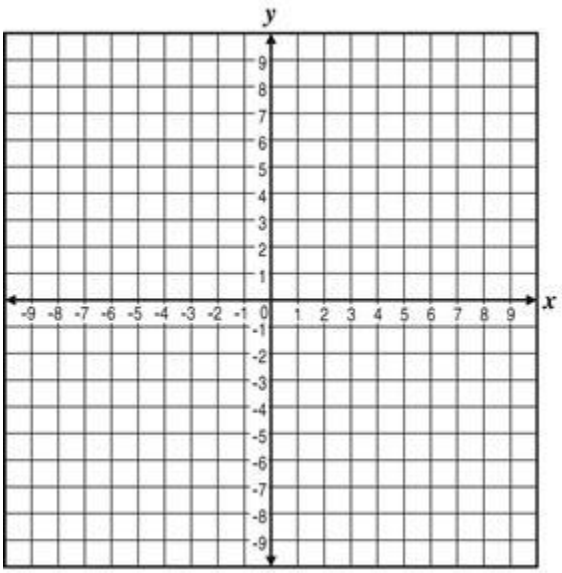
How do we prove that we have the above on the **coordinate plane** (which formula is going to be the most useful)?

_____

Let's go for some practice examples! Yeah!

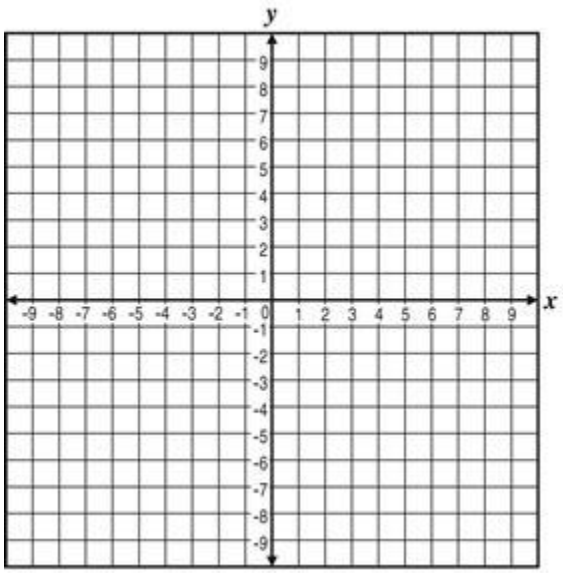
1. Given: ΔDOG with $D(-2,5)$, $O(-4,1)$ and $G(-10,4)$

   Show: ΔDOG is a right triangle.

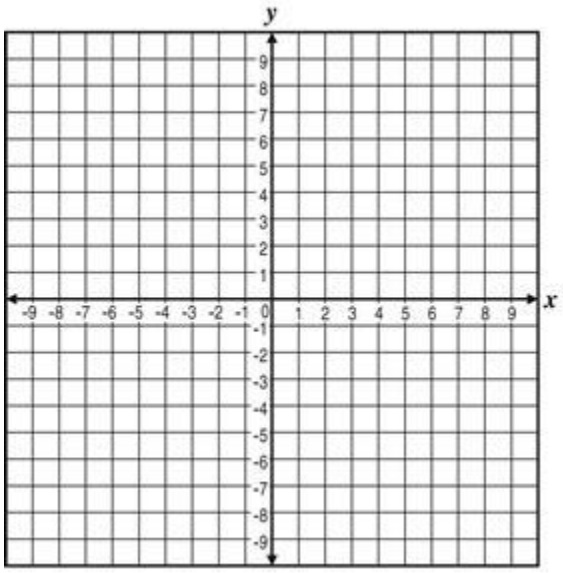


2. Given: Δ*FUN* with *F*(4,-1), *U*(5,6) and *N*(1,3)

Show: Δ*FUN* is an isosceles right triangle.

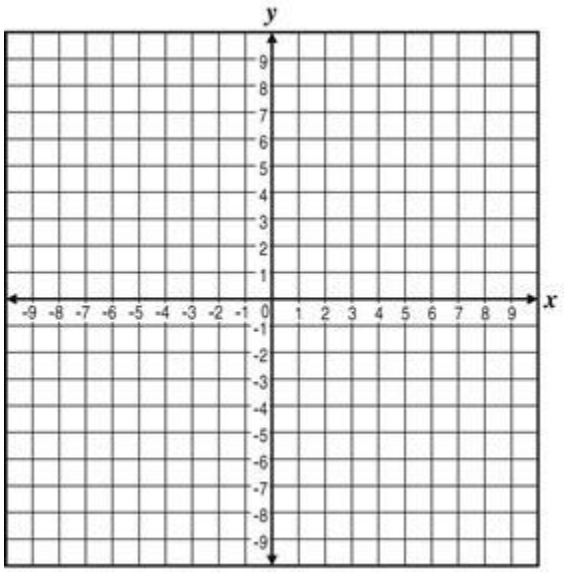


3. **Given:** Δ*DEF* with *D*(-3,3), *E*(3,3), *F*(0,-3)
Show: Δ*DEF* is **NOT** an equilateral triangle.



4. **Given:** ΔABC with $A(-1,-1)$, $B(1,4)$ and $C(3,-1)$

Show: ΔABC is isosceles.



5. Triangle ABC has vertices A (-1, 2), B (-4, 6), and C (7, 8). Prove using coordinate Geometry that ABC is a right triangle.