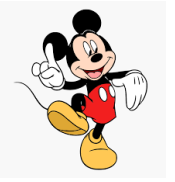
Friday, March 6, 2020



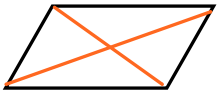
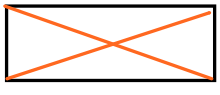
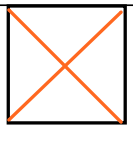
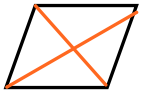
2.4 Classifying Figures on a Coordinate Grid

2.5 Verifying Properties of Geometric Figures

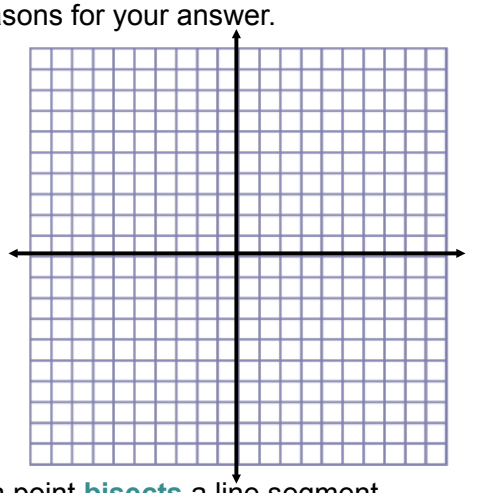
These two sections ask you to use your own critical thinking and problem solving skills to prove geometric properties. You must decide when to use each of the formulas that you know (distance, midpoint, slope, circumference, equation of a circle, etc.). You also need to recall the properties of triangles and quadrilaterals that you have learned previously.

If you are asked to verify, or prove, a statement, you must do so mathematically, and then justify your work through a conclusion. Please be persistent when you are working on these problems. Do not just give up! You have the tools that you need to figure them out, you just need to figure out what approach is most appropriate! **(Do what you know!)**

Properties of Quadrilaterals:

Shape	Side Lengths/Slopes	Diagonals
Parallelogram 		
Rectangle 		
Square 		
Rhombus 		

Example: Determine the type of quadrilateral described by D(-1, ,3), E(6, 4), F(4, -1), and G(-3, -2). Give reasons for your answer.



Hints to Approaching Problems:

- Use **midpoint** to determine whether a point **bisects** a line segment.
- Use **length** to compare the **sides** of a geometric figure (equal or not?).
- Use **slope** to determine if sides are **parallel, perpendicular, or neither**.
- Refer back to your chart of properties to classify shapes accurately.
- Keep in mind that there is always more than one way to approach a problem. The purpose of the work we are doing is for you to find efficient ways to complete problems. **Do not find more information than the question asked for, and draw a picture!!!**

More Practice: Show that the points A(10, 5) and B(2, -11) lie on the circle with equation $x^2 + y^2 = 125$. Also show that the perpendicular bisector of chord AB passes through the centre of the circle.