



VERIFYING PROPERTIES OF GEOMETRIC FIGURES



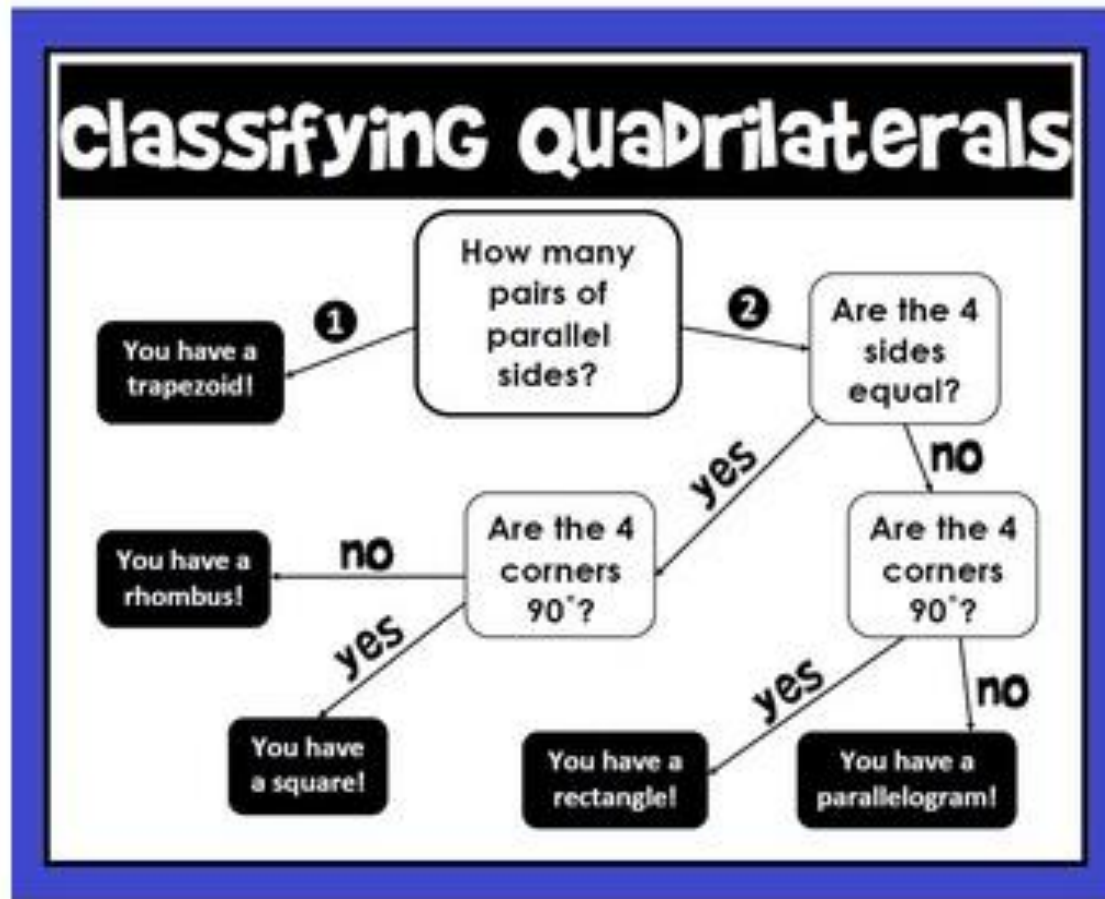
Learning Goal

- ▶ Use analytic geometry to verify properties of geometric figures.



Minds on ...

- ▶ Does this help?



Big Ideas

- ▶ When you draw a geometric figure on a coordinate grid, you can verify many of its properties using the properties of lines and line segments.

You can use the ...	To determine if ...
Midpoint formula	A point bisects a line segment.
Length of a line segment formula	The number of sides of equal length.
Slope formula	Sides are parallel, perpendicular, or neither.



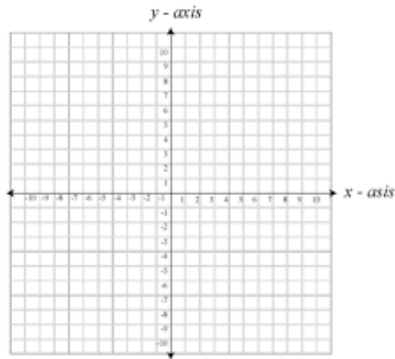
Example #1

- ▶ Show that the midsegments of the quadrilateral with vertices $P(-7, 9)$, $Q(9, 11)$, $R(9, -1)$, & $S(1, -11)$, form a parallelogram.



Solution to Example #1

G



R

A

S

S



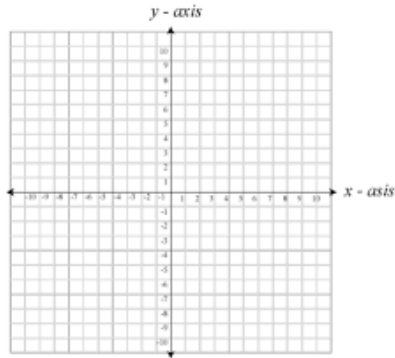
Example #2

- ▶ $\triangle PQR$ has vertices $P(-2, 1)$, $Q(1, 5)$, & $R(5, 2)$. Show that the median from vertex Q is the perpendicular bisector of PR .



Solution to Example #2

G



R

A

S

S



Consolidation

► Think about it!

Answer each of the following questions by Circling Y or N:

a. Is every square a rectangle? Y/N

b. Is every rectangle a square? Y/N

c. Is every rhombus a parallelogram? Y/N

d. Is every parallelogram a rhombus? Y/N

e. Is every parallelogram a trapezoid? Y/N

f. Is every trapezoid a parallelogram? Y/N



Reinforcement

- ▶ Page 110
 - ▶ #4, 5, 10, 13

