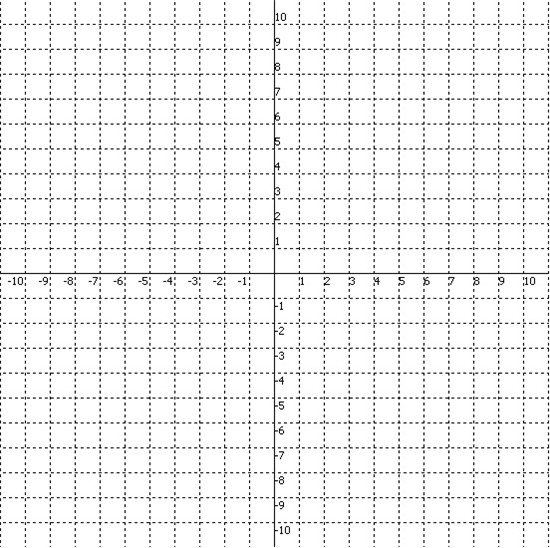
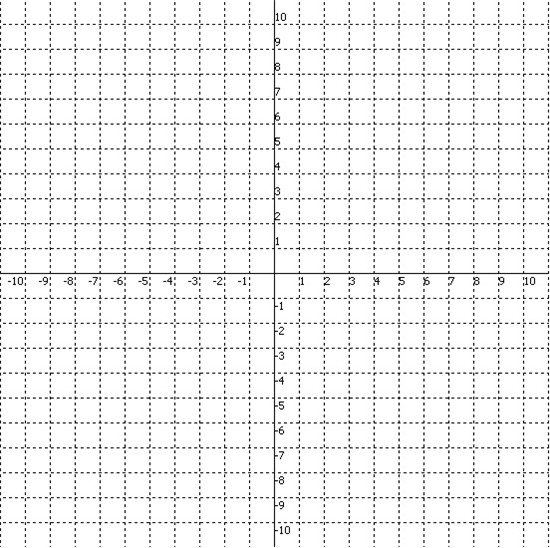
1. Given: Quadrilateral *ABCD* has vertices *A*(−5,6), *B*(6,6), *C*(8,−3), and *D*(−3,−3).

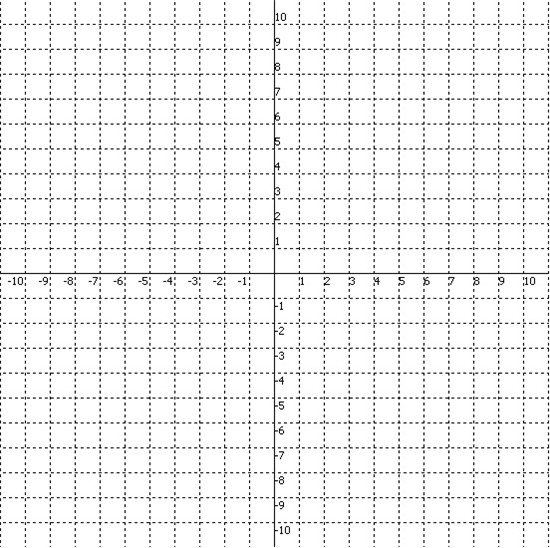
Prove: Quadrilateral *ABCD* is a parallelogram but is neither a rhombus nor a rectangle.

[](http://www.google.com/url?sa=i&rct=j&q=coordiate+plane&source=images&cd=&cad=rja&docid=8Hv3DBX817rEMM&tbnid=YdPJNgG4AuyqsM:&ved=0CAUQjRw&url=http://teacher2teacher.lacoe.edu/kenneth-fisher.aspx&ei=EGk_UZb2H4q20QG9poGQDg&psig=AFQjCNE4SMNEawgAkYJ6pSb02LmLeZxv5A&ust=1363196520223676)

1. Quadrilateral *MATH* has coordinates *M*(1,1), *A*(−2,5), *T* (3,5), and *H*(6,1). Prove that

quadrilateral *MATH* is a rhombus and prove that it is *not* a square.

[](http://www.google.com/url?sa=i&rct=j&q=coordiate+plane&source=images&cd=&cad=rja&docid=8Hv3DBX817rEMM&tbnid=YdPJNgG4AuyqsM:&ved=0CAUQjRw&url=http://teacher2teacher.lacoe.edu/kenneth-fisher.aspx&ei=EGk_UZb2H4q20QG9poGQDg&psig=AFQjCNE4SMNEawgAkYJ6pSb02LmLeZxv5A&ust=1363196520223676)

1. [](http://www.google.com/url?sa=i&rct=j&q=coordiate+plane&source=images&cd=&cad=rja&docid=8Hv3DBX817rEMM&tbnid=YdPJNgG4AuyqsM:&ved=0CAUQjRw&url=http://teacher2teacher.lacoe.edu/kenneth-fisher.aspx&ei=EGk_UZb2H4q20QG9poGQDg&psig=AFQjCNE4SMNEawgAkYJ6pSb02LmLeZxv5A&ust=1363196520223676)Given: △*ABC* with vertices *A*(−6,−2), *B*(2,8), and *C*(6,−2)

*AB* has midpoint *D*, *BC* has midpoint *E*, and

*AC* has midpoint *F*

**Prove**: *ADEF* is a parallelogram

*ADEF* is *not* a rhombus

**or Exercises 4–10, determine whether the parallelogram is a *rhombus,* a *rectangle,* or a *square.* Give the most precise description in each case.**

**4.** A parallelogram has perpendicular diagonals and angle measures of 45, 135, 45, and 135.

**5.** A parallelogram has perpendicular and congruent diagonals.

**6.** A parallelogram has perpendicular diagonals and angle measures that are all 90.

**7.** A parallelogram has congruent diagonals.

**8.** A woman is plotting out a garden bed. She measures the diagonals of the bed and finds that one is 22 ft long and the other is 23 ft long. Could the garden bed be a rectangle? Explain.

**9.** A man is making a square frame. How can he check to make sure the frame is square, using only a tape measure?

**10.** A girl cuts out rectangular pieces of cardboard for a project. She checks to see that they are rectangular by determining if the diagonals are perpendicular. Will this tell her whether a piece is a rectangle? Explain.