Coordinate Geometry Study Guide

Important Formulas

$$\boldsymbol{Distance\ Formula} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\boldsymbol{Midpoint\ Formula} = \left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2}\right)$$

$$\boldsymbol{Slope} = \frac{\boldsymbol{Change\ in\ Y}}{\boldsymbol{Change\ in\ X}}\ \boldsymbol{or}\ \frac{\boldsymbol{Rise}}{\boldsymbol{Run}}\ \boldsymbol{or}\ \frac{y_2 - y_1}{x_2 - x_1}$$

$$\boldsymbol{Area\ of\ a\ rectangle} = L \times W$$

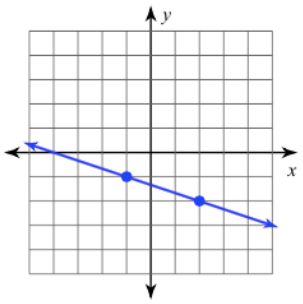
$$\boldsymbol{Area\ of\ Triangle} = \frac{L \times W}{2}$$

For the given slope, find the slope of any parallel and perpendicular line to it.

	Slope of a Line	Slope of Any Parallel Line	Slope of Any Perpendicular Line
1)	10		
2)	$\frac{2}{3}$		
3)	8		
4)	10		
5)	11		
6)	$\frac{7}{8}$		
7)	$\frac{3}{4}$		
8)	$\frac{7}{10}$		
9)	12		
10)	$\frac{3}{8}$		

Find the slope of each line.

1)



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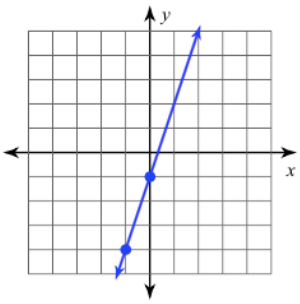

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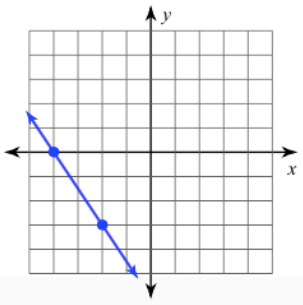

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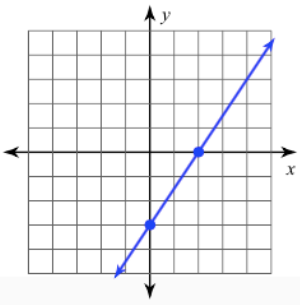
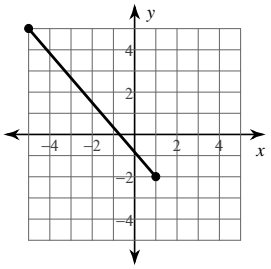


The Distance Formula

Date_____ Period____

Find the distance between each pair of points. Round your answer to the nearest tenth, if necessary.

1)



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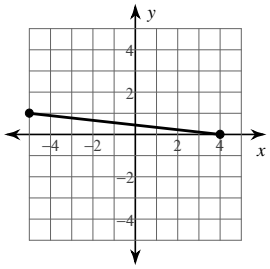

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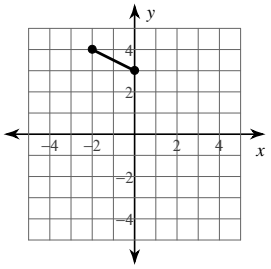

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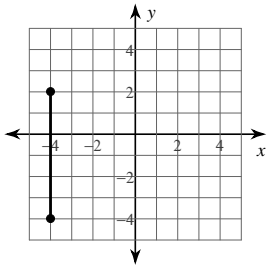

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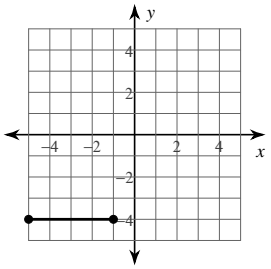

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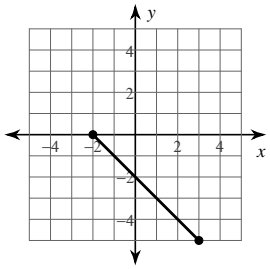


7) $(-2, 3),\ (-7, -7)$

8) $(2, -9),\ (-1, 4)$

9) $(5, 9),\ (-7, -7)$

10) $(8, 5),\ (-1, 3)$

11) $(-10, -7),\ (-8, 1)$

12) $(-6, -10),\ (-2, -10)$

Find the midpoint of the line segment with the given endpoints.

9) $(-4, 4), (5, -1)$

10) $(-1, -6), (-6, 5)$

11) $(2, 4), (1, -3)$

12) $(-4, 4), (-2, 2)$

13) $(5, 2), (-4, -3)$

14) $(-1, 1), (5, -5)$

15) $(2, -1), (-6, 0)$

16) $(-3.1, -2.8), (-4.92, -3.3)$

17) $(-5.1, -2), (1.4, 1.7)$

18) $(4.9, -1.3), (-5.2, -0.6)$

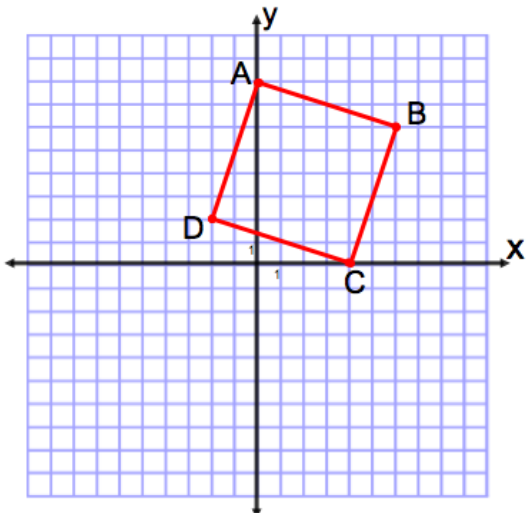
19) $(5.1, 5.71), (6, 3.6)$

20) $(3.1, -2.1), (-0.52, -0.6)$

1.) The figure ABCD below is a square.

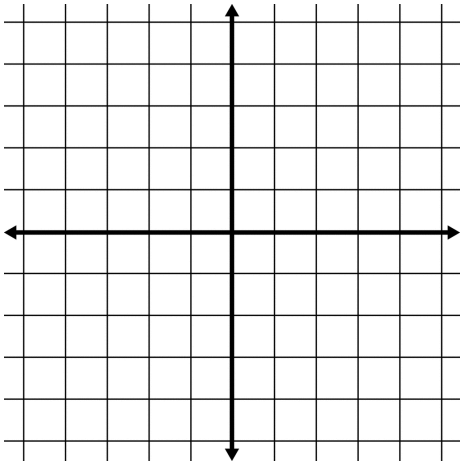
What will you have to show to prove ABCD is a square and explain how you know you are correct.

Prove that ABCD is a square. Show all necessary work.



2.) Prove the following points create a trapezoid in the coordinate plane.

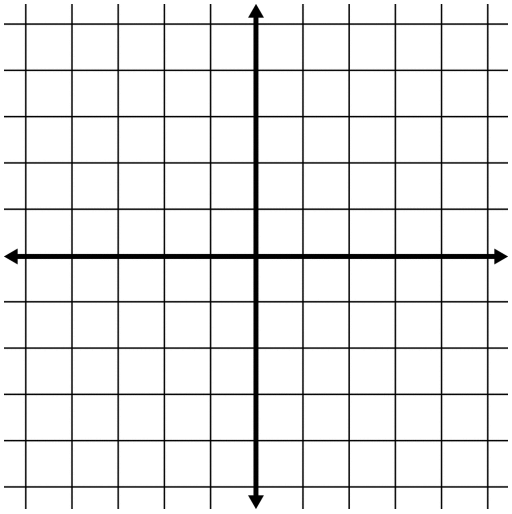
a(-4,2) b(-4,-1) c(-2,-3) d(1,-3)



What do you have to prove?

3.) Prove or disprove the shape below forms a Rhombus.

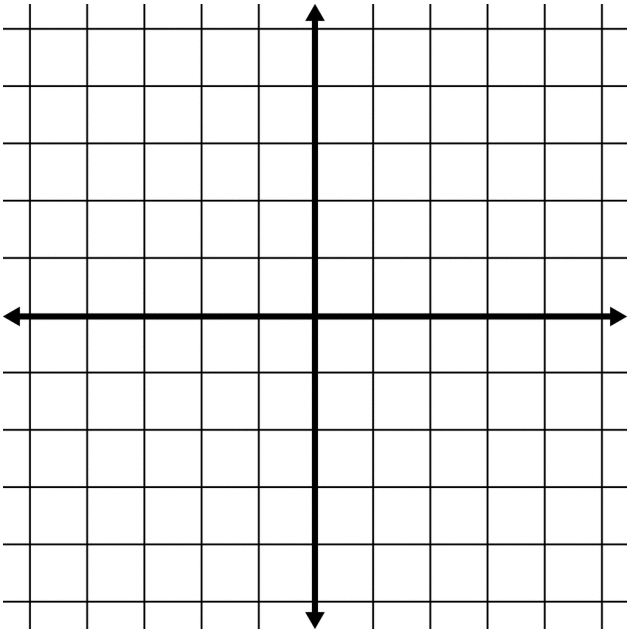
a(-2,0) b(1,1) c(3,-1) d(0,-2)



What do you have to prove?

Find the Area and Perimeter of the polygons below.

A(-1,1) B(-1,4) C(3,1) D(3,4)



A(3,0) B(-3,-2) C(-4,1) D(2,3)