

Name: _____ Date: _____

Coordinate Geometry Proofs

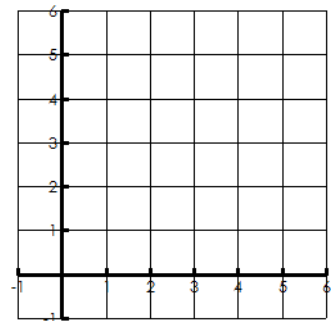
Steps to Coordinate Proofs:

1. Plot the points.
2. Look for key words.
 Parallel, Perpendicular, Right Angles – Use _____ Congruent Sides – Use _____

Example 1: The coordinates of **triangle BCD** are **B(4, 2)**, **C(0, 2)**, and **D(2, 4)**.

Prove that the triangle is an **isosceles triangle**.

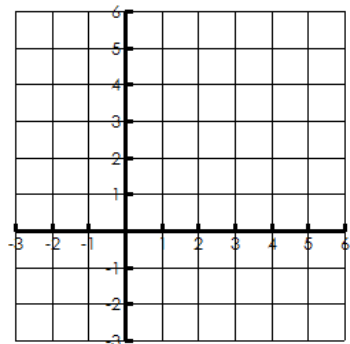
1. What is the question asking you about?
 Parallel OR Perpendicular OR Distance
2. **BC=**
CD=
DB=
3. Is triangle BCD isosceles? How do you know?



Example 2: Triangle ABC has coordinates **A(-1, 3)**, **B(5, 5)**, and **C(4, -2)**.

Prove that the triangle is an **equilateral triangle**.

1. What is the question asking you about?
 Parallel OR Perpendicular OR Distance
2. **AB=**
BC=
CA=
3. Is triangle ABC equilateral? How do you know?

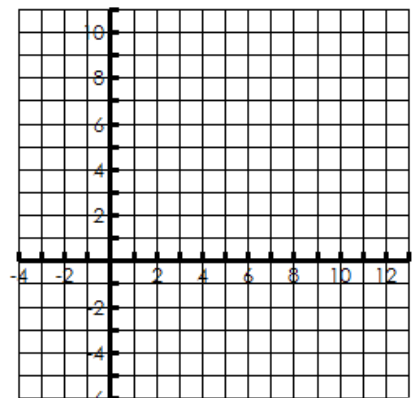


Example 3: A **rectangle** has two pairs of opposite sides that are congruent.

Quadrilateral MIKE has vertices **M(4, 1)**, **I(6, 4)**, **K(12, 0)**, and **E(10, -3)**.

Prove that Quadrilateral MIKE is a **rectangle**.

1. What is the question asking you about?
 Parallel OR Perpendicular OR Distance
2. **MI=**
IK=
KE=
EM=
3. Is MIKE a rectangle? How do you know?



Example 3b: A rectangle has 4 right angles.

Quadrilateral MIKE has vertices $M(4, 1)$, $I(6, 4)$, $K(12, 0)$, and $E(10, -3)$.

Prove that Quadrilateral MIKE is a **rectangle**.

1. What is the question asking you about?

Parallel OR Perpendicular OR Distance

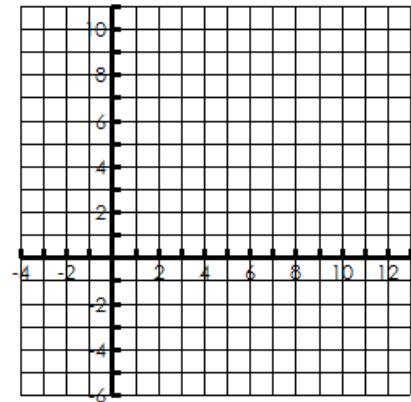
2. $MI =$

$IK =$

$KE =$

$EM =$

3. Is MIKE a rectangle? How do you know?

**Example 4: A square has four congruent sides.**

Quadrilateral DIAN has vertices $D(0, 5)$, $I(3, 6)$, $A(4, 3)$ and $N(1, 2)$.

Prove that Quadrilateral DIAN is a **square**.

1. What is the question asking you about?

Parallel OR Perpendicular OR Distance

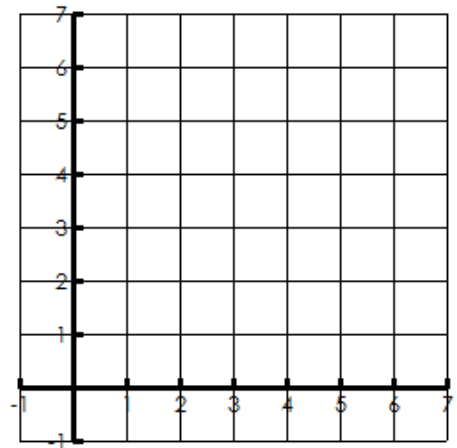
2. $DI =$

$IA =$

$AN =$

$ND =$

3. Is DIAN a square? How do you know?

**Example 4b: A rhombus has perpendicular diagonals.**

Quadrilateral DIAN has vertices $D(0, 5)$, $I(3, 6)$, $A(4, 3)$ and $N(1, 2)$.

Prove that Quadrilateral DIAN is a **rhombus**.

1. What is the question asking you about?

Parallel OR Perpendicular OR Distance

2. $DA =$

$IN =$

3. Is DIAN a rhombus? How do you know?

