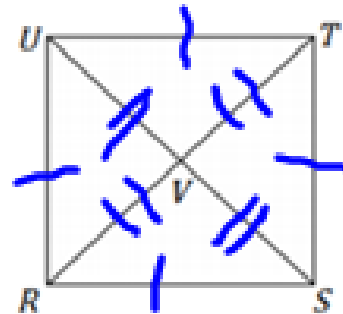


2. Consider the two-column proof below. Put the statements and reasons in the correct order by writing the correct number in the left column.

Given: $RSTU$ is a square.

Prove: $\overline{RT} \perp \overline{SU}$

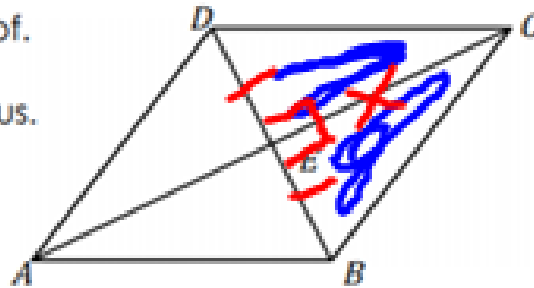


	Statements	Reasons
3	$\overline{UV} \cong \overline{SV} \cong \overline{RV} \cong \overline{TV}$	In a square, diagonals are congruent and bisect each other.
8	$\overline{RT} \perp \overline{SU}$	Definition of bisector
2	$m\angle UVR + m\angle TVU = 180^\circ$ $m\angle RVS + m\angle TVS = 180^\circ$	Linear Pairs
7	$\overline{UT} \cong \overline{TS} \cong \overline{RS} \cong \overline{UR}$	Definition of a square
4	$m\angle UVR = m\angle TVU = m\angle RVS$ $= m\angle TVS = 90^\circ$	Substitution
5	$\Delta UVR \cong \Delta RVS \cong \Delta SVT$ $\cong \Delta TVU$	SSS
1	$RSTU$ is a square.	Given
6	$\angle UVR \cong \angle TVU \cong \angle RVS$ $\cong \angle TVS$	CPCTC

5. Complete following proof.

Given: $ABCD$ is a rhombus.

Prove: \overline{AC} bisects $\angle DCB$ of the rhombus.

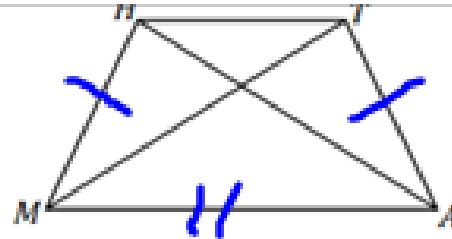


Statements	Reasons
1. $ABCD$ is a rhombus.	1. Given
2. $\overline{AC} \perp \overline{DB}$	2. <u>Diagonals of a rhombus are perpendicular</u>
3. $\angle DEC$ & $\angle BEC$ are Right \angle 's	3. Definition of perpendicular lines
4. $\angle DEC \cong \angle BEC$	4. All Right \angle 's are \cong
5. $\overline{DE} \cong \overline{BE}$	5. Diagonals bisect each other in a parallelogram
6. $\overline{EC} \cong \overline{EC}$	6. Reflexive Property
7. $\triangle DEC \cong \triangle BEC$	7. SAS
8. $\angle DCE \cong \angle BCE$	8. CPCTC
9. \overline{AC} bisects $\angle DCB$ of the rhombus.	9. Definition of an angle bisector

1. Complete the following proof.

Given: $MATH$ is an isosceles trapezoid.

Prove: $\angle MHA \cong \angle ATM$



Complete the paragraph proof using the bank of terms below.

It is given that $MATH$ is an isosceles trapezoid. We can prove that $\overline{MH} \cong \overline{AT}$ [Def Is. Trap.]. Then, $\overline{MA} \cong \overline{MA}$ by the [Reflexive]. We can state that $\overline{AH} \cong \overline{MT}$ by using the [Trapezoid Diagonal Theorem]. Now, we have triangles $\triangle HMA \cong \triangle TAM$ by [SSS]. Finally, by using [CPCTC], we can prove that $\angle MHA \cong \angle ATM$.

Reflexive Property	Midsegment Theorem for Trapezoids
Trapezoid Base Angles Theorem	Definition of Isosceles Trapezoid
ASA	SSS
Trapezoid Diagonals Theorem	Transitive Property
Alternate Interior Angles	CPCTC

Let's discuss writing proofs using Coordinate Geometry.

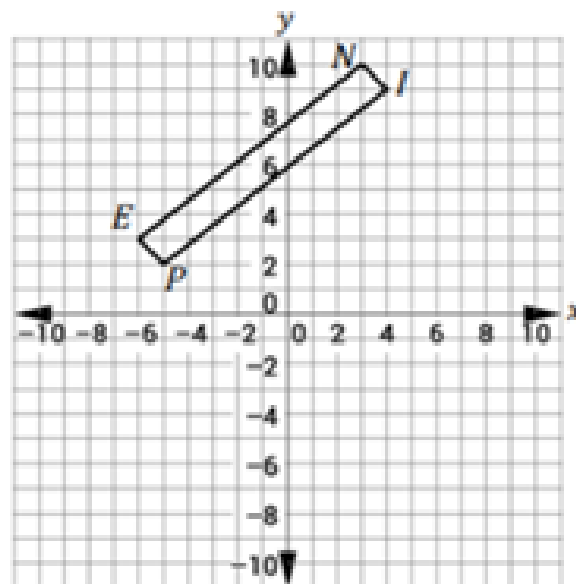
- Coordinate geometry involves placing geometric figures in a Coordinate Plane.
- Coordinate geometry proofs use several kinds of formulas.

Distance Formula	Slope Formula	Midpoint Formula
$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ Lengths	$m = \frac{y_2 - y_1}{x_2 - x_1}$ // or \perp	$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$ bisecting

Consider the information and figure below.

Given:

$PINE$ is a quadrilateral with vertices at $P(-5, 2)$, $I(4, 9)$, $N(3, 10)$, and $E(-6, 3)$.



Prove:

$PINE$ is a parallelogram.

Write a paragraph proof based on the above information and diagram.

Slope of \overline{EP} is -1 & slope of \overline{NI} is -1
so $\overline{EP} \parallel \overline{NI}$. Slope of \overline{EN} is $\frac{7}{9}$ &
Slope of \overline{PI} is $\frac{7}{9}$ so $\overline{EN} \parallel \overline{PI}$
Therefore $PINE$ is a //gram by
def of a //gram.