

PROVING THINGS ABOUT LINES & SEGMENTS

WHAT TO PROVE	HOW TO PROVE	FORMULA TO USE
Lines/segments are PARALLEL	Show that slopes are the same	Slope formula
Lines/Segments are NOT PARALLEL	Show that slopes are not the same	Slope formula
Lines/Segments are PERPENDICULAR	Show that slopes are opposite reciprocals	Slope formula
Segments BISECT EACH OTHER	Show that they have the same midpoint	Midpoint formula
Segments are CONGRUENT	Show that they have the same length	Distance Formula

PROVING PARALLELOGRAMS USING COORDINATE GEOMETRY

WAYS TO PROVE (4 options)	HOW TO PROVE IT	FORMULA TO USE
Prove that BOTH PAIRS of opposite sides are <b>congruent</b>	Show that both pairs of opposite sides are equal in length	Distance formula
Prove that BOTH PAIRS of opposite sides are <b>parallel</b>	Show that the slopes of both pairs of opposite sides are the same	Slope formula
Prove that DIAGONALS <b>bisect each other</b>	Show that the diagonals have the same midpoint	Midpoint formula
Prove that One Pair of opposite sides are both <b>Congruent and parallel</b>	Show that one pair of opposite sides has the same slope and that they are congruent to each other	Slope formula, Distance formula

PROVING RECTANGLES USING COORDINATE GEOMETRY

WAYS TO PROVE (3 options)	HOW TO PROVE IT	FORMULA TO USE
Prove that it is a PARALLELOGRAM with <b>congruent diagonals</b>	Pick a method from the previous page, then show that the diagonals are congruent	Distance formula
Prove that it is a PARALLELOGRAM with <b>at least one right angle</b>	Pick a method from the previous page, then show that two adjacent sides are $\perp$	Slope formula (to show that the slopes are opposite reciprocals)
Prove that <b>all angles are right angles</b>	Show that all of the sides that meet are meeting at perpendiculars	Slope formula (to show that the slopes are opposite reciprocals)

PROVING RHOMBUSES USING COORDINATE GEOMETRY

WAYS TO PROVE (3 options)	HOW TO DO THIS WITH COORDINATE GEOMETRY?
Prove that it is a PARALLELOGRAM with <b><math>\perp</math> diagonals</b>	Use the slope formula to show that the diagonals are $\perp$ (slopes are opposite reciprocals)
Prove that it is a PARALLELOGRAM with <b>one pair of <math>\cong</math> adjacent sides</b>	Use the distance formula to show that two consecutive sides are equal in length (two sides that are touching)
Prove that all sides are <b><math>\cong</math></b>	Use the Distance Formula to show that all four sides are the same length

PROVING A SQUARE USING COORDINATE GEOMETRY

WAYS TO PROVE (2 options)	HOW TO DO THIS WITH COORDINATE GEOMETRY?
Prove that it is a RECTANGLE with <b>one pair of consecutive congruent sides</b>	Use a rectangle method, then use the distance formula to show that two consecutive sides are equal in length
Prove that it is a RHOMBUS <b>with at least one right angle</b>	Use a rhombus method, then use the $\perp$ slope property to show two adjacent sides are perpendicular to each other