



## Using Coordinates to Compute Perimeters and Areas

### Today's Standard

HSG.GPE.B7 - Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.\*

Cues	Notes
What is the distance formula?	The distance formula is $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ .
How do you compute the perimeter of a polygon using coordinates?	To compute the perimeter, sum the distances between consecutive vertices.  For triangles, use $\frac{1}{2} * \text{base} * \text{height}$ ; for rectangles, use $\text{length} * \text{width}$ .
What is the area formula for triangles and rectangles?	Misconceptions include confusing the distance and midpoint formulas, and incorrect application of the distance formula.
Common misconceptions about the distance formula	Applications include designing parks, architectural planning, and land surveying.
Real-world applications of coordinate geometry	

### Summary

This standard involves using coordinates to calculate perimeters and areas of geometric shapes, emphasizing the correct application of the distance formula. Understanding this is crucial for solving real-world problems and advancing in geometry.