

Prepare by studying this list, your notes, activities, homework, and quizzes.

**Coordinate Geometry:**

1. Find locations (quadrants, positive/negative axes, or origin) of midpoints, endpoints of segments.
2. Use the Pyth. Theorem to compute distance between 2 points, lengths of polygon sides, perimeter.
3. Use right triangles to tell when two distances are equal without actually computing.
4. Use right triangles to find points with given distances, as " $AB = 3BC$ " or " $M$  is  $\overline{XY}$ 's midpoint."
5. Compute slopes, including for parallel, perpendicular lines, horizontal, or vertical lines.
6. Find points with given distance/parallel/perpendicular info, as " $\overleftrightarrow{PQ} \perp \overleftrightarrow{QR}$  and  $PR = 2PQ$ ."
7. Re-MEMORIZE the definitions of the different types of triangles and quadrilaterals.
8. Find one or more missing points to create various kinds of triangles and quadrilaterals.

**Rigid Motions:**

1. DRAW the image of a translation described verbally, by an arrow, or on a grid.
2. DRAW the image of a reflection, both on and without a grid.
3. DRAW the image of a rotation, both on and without a grid.
4. Given a complete diagram, NAME the image of an object after one OR MORE rigid motions.
5. Given two images that are reflections of each other, find the line of reflection.
6. Given two images that are rotations of each other, find the center of rotation.
7. Patty paper will be provided.

**Symmetry:**

1. Describe what this term means.
2. Given a figure, name the types of symmetry it possess or lacks.
3. Draw figures that have/lack certain symmetry, such as "has rotational but not reflectional."
4. Complete partial diagrams so that the result will have specified symmetry (as on the Quiz).
5. Tell the number of degrees a figure must rotate to demonstrate symmetry ( $360^\circ$  never counts).  
Be prepared to give multiple answers.
6. Sketch the lines of symmetry of a figure.
7. For a regular  $n$ -gon, tell the number of lines of symmetry and the minimum angle of rotation.

**Congruence:**

1. Describe what this term means.
2. Predict whether a given structure will be rigid or flexible, knowing why.
3. Correct a structure to make it rigid.
4. Know the three acronyms that guarantee triangle congruence, what words they represent, and both versions of how to state each one.
5. Know that AAA and ASS don't guarantee congruence; draw examples illustrating this failure.
6. Given a diagram, identify a pair of congruent triangles, name and justify the acronym you use.
7. Correctly use notation to report triangle congruence.

**Bring an approved calculator for the exam.**