Chapter 3 Geometry Test

**Make sure you know the 7 ways to prove that two lines are parallel

- Show alternate interior angles are congruent
- Show alternate exterior angles are congruent
- Show corresponding angles are congruent
- Show same side interior angles are supplementary
- Show same side exterior angles are supplementary
- Parallel to the same line
- Perpendicular to the same line

- Triangle Angle-Sum Theorem- The sum of the measures of the angles of a triangle is 180.

- Classifying Triangles
  - Based on Angles
    - Equiangular- all angles are congruent
    - Acute- all angles are acute
    - Right- one right angle
    - Obtuse- one obtuse angle
  - Based on sides
    - Equilateral- all sides congruent
    - Isosceles- At least two sides are congruent
    - Scalene- no sides are congruent

- Triangle Exterior angle theorem- the measure of each angle of a triangle equals the sum of the measures of its two remote interior angles.

- Polygon- a closed plane figure with at least three sides that are segments. The sides intersect only at their endpoints and no adjacent sides are collinear.
  - Equiangular- all angles in the polygon are equal
  - Equilateral- all sides in the polygon are equal
  - Regular- all sides and angles are equal

- Classify by sides
  - Triangle (3)
  - Quadrilateral (4)
  - Pentagon (5)
  - Hexagon (6)
  - Heptagon/Septagon (7)
  - Octagon (8)

- Nonagon (9)
- Decagon (10)
- Dodecagon (12)
- N-gon (n= 11 or greater than 12)

- Convex vs concave
  - Convex has no diagonal with points inside the polygon
  - Concave has at least one diagonal with points outside the polygon

| | **Sum** | **One Angle (if regular)** |
|---|---|---|
| **Interior** | $(n-2)180$ | $\frac{(n-2)180}{n}$ |
| **Exterior** | $360$ | $\frac{360}{n}$ |

**Make sure you know any vocabulary from this chapter. The vocabulary section will be a fill in the blank questions.