

Chapter 6 Test Prep

1. VOCAB!!!!!!!!!!!!!! Know all of the terms: (10 points)
 - a. Def of circumcenter: point of concurrency of the perpendicular bisectors
 - b. Def of incenter: point of concurrency of the angle bisectors
 - c. Def of centroid: point of concurrency of the medians
 - d. Def of orthocenter: point of concurrency of the altitudes
 - e. Midsegment of a triangle: A segment whose endpoints are the midpoints of two sides of the triangle
 - f. Median of a triangle: A segment whose endpoints are a vertex of an angle and the midpoint of the angle's opposite side
 - g. Altitude of a triangle: A segment that passes through the vertex of one angle and is perpendicular to the side opposite of the angle.
 - h. Point-slope form for equation of a line
 - i. Slope-intercept form for equation of a line
2. THEOREMS!!!!!!!!!! Know all of these theorems and how to use them
 - a. Perpendicular Bisector Theorem and its converse (2 points)
 - b. Angle Bisector Theorem and its converse (3 points)
 - c. Circumcenter Theorem: the circumcenter (formed by perpendicular bisectors) is equidistant from the vertices of the triangle
 - d. Incenter Theorem: the incenter (formed by angle bisectors) is equidistant from the sides of the triangle (3 points)
 - e. Centroid Theorem: the centroid (formed by medians) is located $\frac{2}{3}$ of the distance of the median away from the vertex (3 points)
 - f. Triangle Midsegment Theorem: a triangle's midsegment is parallel to the third side, and is always half the length of its parallel side. (8 points)
 - g. Triangle Longer Side Theorem, Triangle Larger Angle Theorem, and Hinge Theorem and its converse (8 points)
 - h. Triangle Inequality Theorem (10 points)
 - i. Use to determine if a triangle can be made
 - ii. Use to determine the range of side lengths a third side can be given two sides
3. Write the equation (in slope-intercept form) for the perpendicular bisector of a segment in the coordinate plane (4 points)
4. Find the following in the coordinate plane. (15 points)
 - a. Circumcenter
 - b. Centroid
 - c. Midsegment
 - d. Orthocenter
5. Know the general process for writing an indirect proof...

Chapter 6 Performance Task

1. You will need to KNOW THE VOCAB for and HOW TO CONSTRUCT (with compass and straightedge)...
 - a. **Circumcenter**
 - i. construct at least 2 of the perpendicular bisectors
 - ii. know it is equidistant from the vertices
 - b. **Centroid** (construct at least 2 of the medians)
 - c. **Incenter**
 - i. construct at least 2 of the angle bisectors
 - ii. know if it equidistant from the sides
 - d. **Orthocenter** (construct at least 2 of the altitudes)