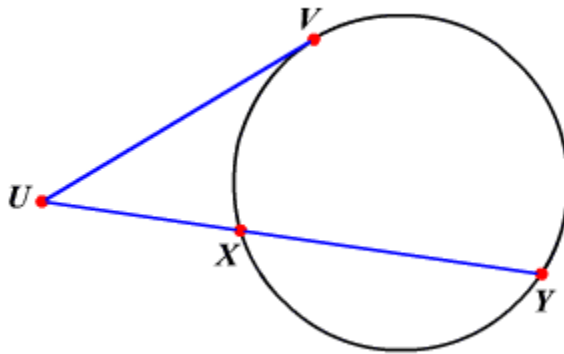


Homework 5

Name _____

1. Prove following theorems:
 - a. The line from the centre of a circle to the midpoint of a chord is perpendicular to the chord.
 - b. Equal chords in equal circles are equidistant from the centres.
 - c. Chords in a circle which are equidistant from the centre are equal.
 - d. The products of the intercepts of two intersecting chords are equal.
 - e. Angles in the same segment are equal.
 - f. The angle in a semicircle is a right angle.
 - g. Opposite angles of a cyclic quadrilateral are supplementary.
 - h. The exterior angle at a vertex of a cyclic quadrilateral is equal to the interior opposite angle.
 - i. The products of the intercepts of two intersecting chords are equal.
 - j. The products of the intercepts of two intersecting secants to a circle from an external point are equal.
 - k. Tangents to a circle from an external point are equal.
 - l. The angle between a tangent and a chord through the point of contact is equal to the angle in the alternate segment.
2. Prove: The square of the length of the tangent from an external point is equal to the product of the intercepts of the secant passing through this point. (Grades 4-6 may not know how to handle similar triangles. Teacher will introduce similar triangles in class)



3. How many times in a day do the minute and hour hands of a clock coincide (Angle between them is zero) with each other?
4. How many times in a day do the minute and hour hands of clock form a 180° straight line in a day?