**10.8 NOTES: The Power Theorems**

○ **Chord-Chord Power Thm.**
If two chords of a circle intersect inside the circle, then the product of the measures of the segments of one chord is equal to the product of the measures of the segment of the other chord.

Given: Chords VN and LS intersect at point E inside the circle.

Conclude: \( EV \cdot EN = EL \cdot SE \)

○ **Tangent-Secant Power Thm.**
If a tangent segment and a secant segment are drawn from an external point to a circle, then the square of the measure of the tangent segment is equal to the product of the measures of the entire secant segment and its external part.

Given: \( \overline{PR} \) is a secant segment.  
\( \overline{PT} \) is a tangent segment.

Conclude: \( (TP)^2 = (PR)(PQ) \)

○ **Secant-Secant Power Thm.**
If two secant segments are drawn from an external point to a circle, then the product of the measures of one secant segment and its external part is equal to the product of the measures of the other secant segment and its external part.

Given: Secant segments \( \overline{PB} \) and \( \overline{PD} \)

Conclusion: \( PB \cdot PA = PD \cdot PC \)

Find: PD and EA.

2. If TR = 10, and PR = 50, find PA.

3. If TR = 10, and QR = 4, find PA.

4. If TR = 10, and QR = 5, find PR.

5. If TR = 10, and QR = 6, find PR.

6. Find the radius of circle P.

7. Find the midpoint of O5. T7 = 8 and

8. Sample Problems.
Solve for $x$. Assume O is center of any circle.

1. 

2. 

3. 

4. 

5. 

6. 
