LEARNING AS ONE NATION
Expanded Project

JHS LEARNING ACTIVITY

Name: _____ **Grade/Score:** _____
Grade and Section: _____ **Date:** _____

Subject *(Check or choose from below.)*

- ☐ Religion/Values Education
- ☐ Natural Sciences
- ☐ Araling Panlipunan
- ☐ Filipino
- ☐ English
- ☐ Math
- ☐ TLE / ICT
- ☐ MAPEH
- ☐ HGP _____

Type of Activity *(Check or choose from below.)*_____

- ☐ Concept Notes
- ☐ Skills: Exercise / Drill
- ☐ Performance Task
- ☐ Illustration
- ☐ Formal Theme
- ☐ Informal Theme
- ☐ Others: _____

Activity Title: Angles Formed by Tangents

Learning Target: To measure an angle formed by tangents.

References: *(Author, Title, Pages)*
1) F.B. Orines, et.al., Next Century Mathematics, pp. 256-258
2) V.G. Baja, CVIF Learning Activities

Definition:

A tangent is a line that intersects the circle at exactly one point called the point of tangency.

Theorem

The measure of an angle that is formed by two tangents to the same circle is one-half the positive difference of the measures of the intercepted arcs.

Application:

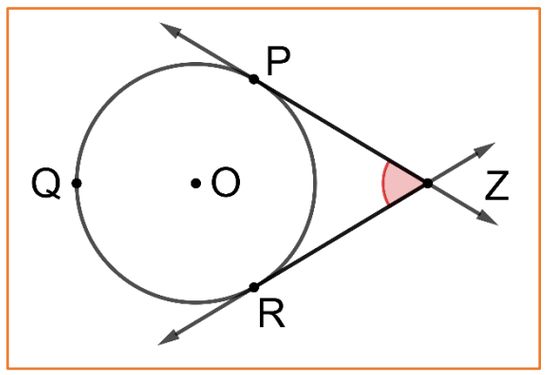
Given: $m\widehat{PQR} = 220°$

Tangents $\overleftrightarrow{ZP}$ and $\overleftrightarrow{ZR}$ to circle O intersecting at point Z

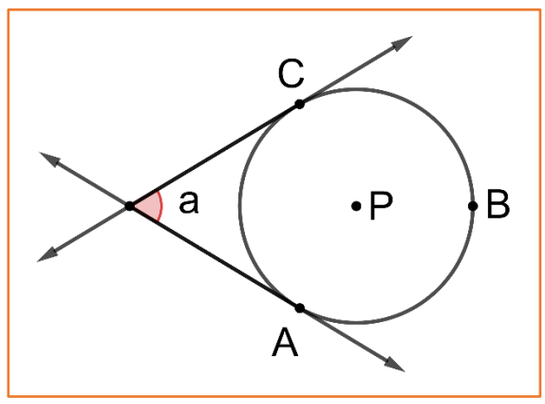
Find: $m\angle PZR = ?$

Solution:

$$m\angle PZR = \frac{1}{2}(m\widehat{PQR} - m\widehat{PR})$$
$$= \frac{1}{2}(220° - 140°)$$
$$= \frac{1}{2}(80°)$$
$$m\angle PZR = 40°$$



Exercises:

Consider the given diagram and answer for the two different situations.

1) If $m\widehat{ABC} = 185°$,
   Find: a) $m\widehat{AC}$
   b) $m\angle a$
2) If $m\angle a = 60°$ and $m\widehat{ABC} = 240°$,
   Find: $m\widehat{AC}$.