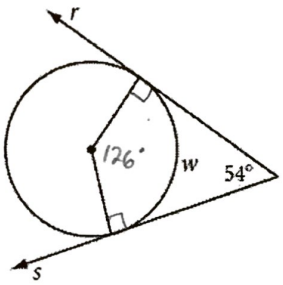
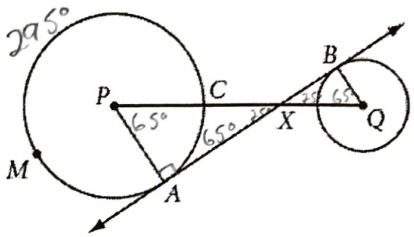
9.1 Tangent Properties Day 2 Practice Name Key
Geometry 3313 Date _____ Period _____

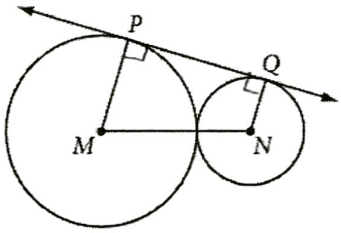
1. Rays r and s are tangents. $w =$ 126°



2. $\overleftrightarrow{AB}$ is tangent to both circles and $m\overset{\frown}{AMC} = 295°$. $m\angle BQX =$ 65°



3. $\overleftrightarrow{PQ}$ is tangent to two externally tangent noncongruent circles, M and N.

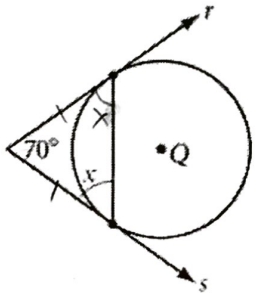


a. $m\angle NQP =$ 90°, $m\angle MPQ =$ 90°

b. What kind of quadrilateral is $MNQP$? Explain your reasoning.

Trapezoid. $\overline{MP} \parallel \overline{QN}$, but $\overline{MP} \not\parallel \overline{NQ}$ since the circles are not congruent.

4. Rays r and s are tangent to circle Q. Find x.

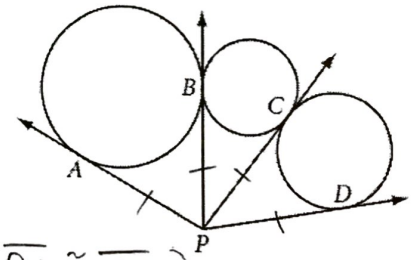


$2x + 70 = 180$

$2x = 110$

$\boxed{x = 55°}$

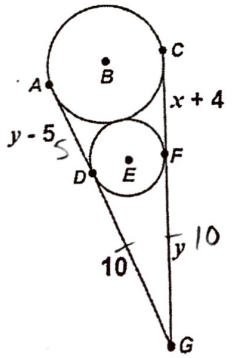
5. $\overrightarrow{PA}$, $\overrightarrow{PB}$, $\overrightarrow{PC}$, and $\overrightarrow{PD}$ are tangents. Explain why $\overline{PA} \cong \overline{PD}$.



$\overline{PA} \cong \overline{PB}$
$\overline{PB} \cong \overline{PC}$
$\overline{PC} \cong \overline{PD}$

$\overline{PA} \cong \overline{PD}$ by transitive property of congruence

6. Solve for the values of x and y in the figure below.



$y = 10$

$15 = 10 + x + 4$

$1 = x$

x = 1

y = 10