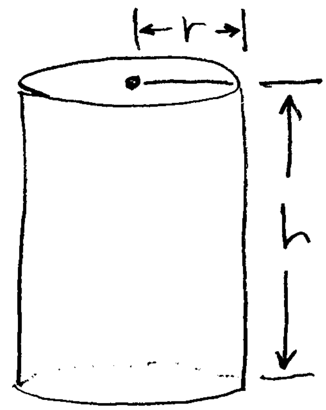
BE - Geometry 1 Tuesday 1-31-12

① Find the surface area (exact) of the following right cylinder:



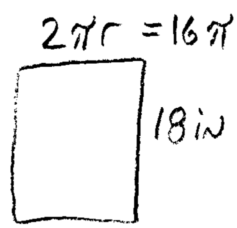
$r = 8$ inches

$h = 1.5$ feet

Area of $\odot \Rightarrow \pi r^2 = 64\pi$

times 2 $\Rightarrow \times 2$

128π

Area of 

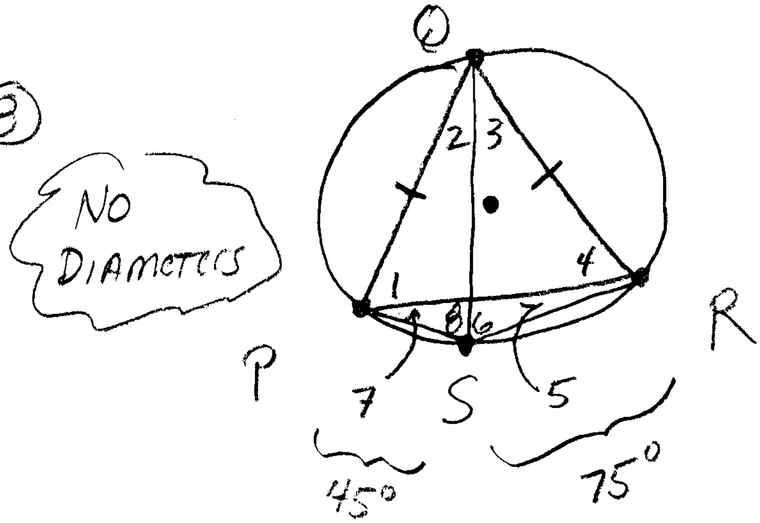
$\Rightarrow 288\pi$

$\boxed{416\pi \text{ in}^2}$

$$\begin{array}{r} 16 \\ \times 18 \\ \hline 128 \\ 16 \\ \hline 288\pi \end{array}$$

Geometry 1 Homework Review – Pg 549, #8, 9, 13

8



GIVEN:

$\overline{PQ} = \overline{RQ}$

$\therefore \angle 1 \cong \angle 4$

$m\,\widehat{PS} = 45^\circ$

$m\,\widehat{SR} = 75^\circ$

$m\,\widehat{PS} = 45^\circ \therefore \boxed{m\angle 2 = 22.5^\circ}$

$m\,\widehat{SR} = 75^\circ \therefore \boxed{m\angle 3 = 37.5^\circ}$

$\therefore m\angle PQR = 22.5 + 37.5 = 60^\circ$

Since $\angle 1 \cong \angle 4$ and $\angle 1 + \angle 4 = 180 - 60 = 120$

$\therefore \boxed{m\angle 1 = m\angle 4 = 60^\circ}$

$m\,\widehat{PS} = 45^\circ \therefore \boxed{m\angle 5 = 22.5^\circ}$

$m\,\widehat{SR} = 75^\circ \therefore \boxed{m\angle 7 = 37.5^\circ}$

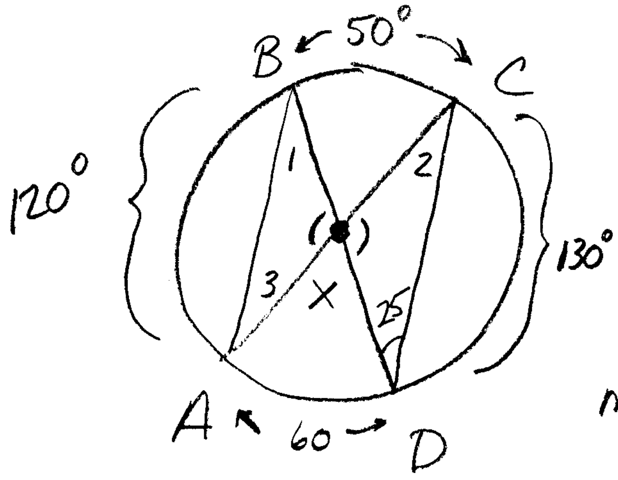
$m\,\widehat{QR} = 2(m\angle 1) = 2(60) = 120^\circ$

$\therefore$ included Angle 6 $\Rightarrow \frac{120}{2} = \boxed{60^\circ = m\angle 6}$

$m\,\widehat{QP} = 2(m\angle 4) = 2(60) = 120^\circ$

$\therefore$ included Angle 8 $\Rightarrow \frac{120}{2} = \boxed{60^\circ = m\angle 8}$

9.



GIVEN:

$m\angle BDC = 25°$

$m\widehat{AB} = 120°$

$m\widehat{CD} = 130°$

POINT X IS <u>NOT</u> A CENTER!

Since $m\angle BDC = 25°$, $m\widehat{BC} = 50°$

$\therefore m\widehat{AD} = 360 - [120 + 50 + 130] = 60°$

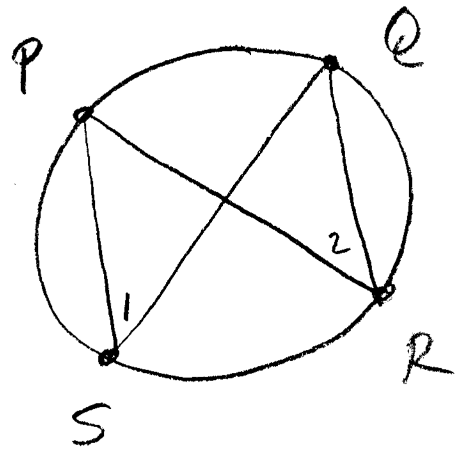
$\therefore m\angle 1 = \frac{60}{2} = \boxed{30° = m\angle 1}$

$m\angle 2 = \frac{60}{2} = \boxed{30° = m\angle 2}$

$\therefore m\angle CXD = 180 - [30 + 25] = 125°$

$\therefore m\angle 3 = 180 - [125 + 30] = \boxed{25° = m\angle 3}$

(13)



GIVEN:

$m\angle 1 = x$

$m\angle 2 = 2x - 13$

Since both $\angle 1$ and $\angle 2$ intercept $\overset{\frown}{PQ}$, $\angle 1 \cong \angle 2$

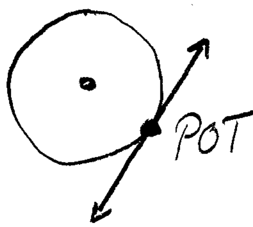
$\therefore \quad x = 2x - 13$

$13 = x$

$$\therefore \boxed{\begin{array}{l} m\angle 1 = 13^\circ \\ m\angle 2 = 2(13) - 13 = 13^\circ \end{array}}$$

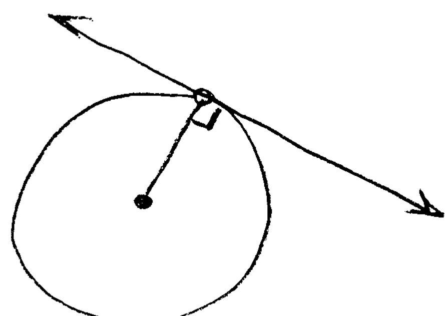
Ch. 10-5 Tangents

tangent — A line intersecting a circle at exactly one point. The point is called the "point of tangency."



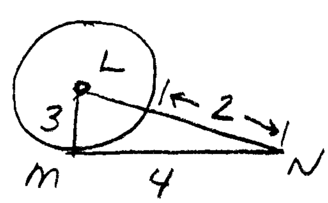
Theorem 10.9

If a line is tangent to a circle, it is perpendicular to the radius drawn to the Point of Tangency



Ex 2A
Pg 553

Is $\overline{MN}$ tangent to $\odot L$



Since $\overline{LN} = 3 + 2 = 5$
$\overline{LM} = 3$
$\overline{MN} = 4$

$\left.\right\}$ $3^2 + 4^2 = 5^2$
$m\angle LMN = 90°$ ✓ TANGENT.

Do NOT ASSUME (UNLESS TOLD) A line is tangent by its appearance. Either a radius is marked ⊥ AT the POT or the measurements confirm a right △.

Theorem 10.11

If more THAN ONE line from the same exterior point is tangent to A circle, the lines are congruent

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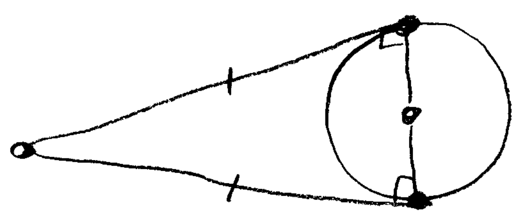
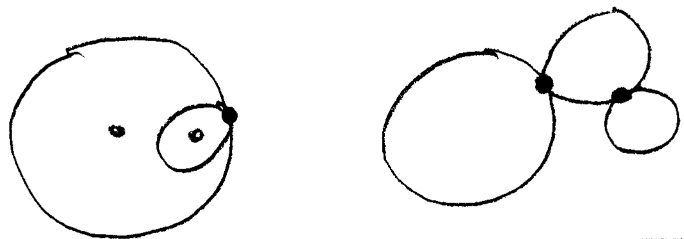
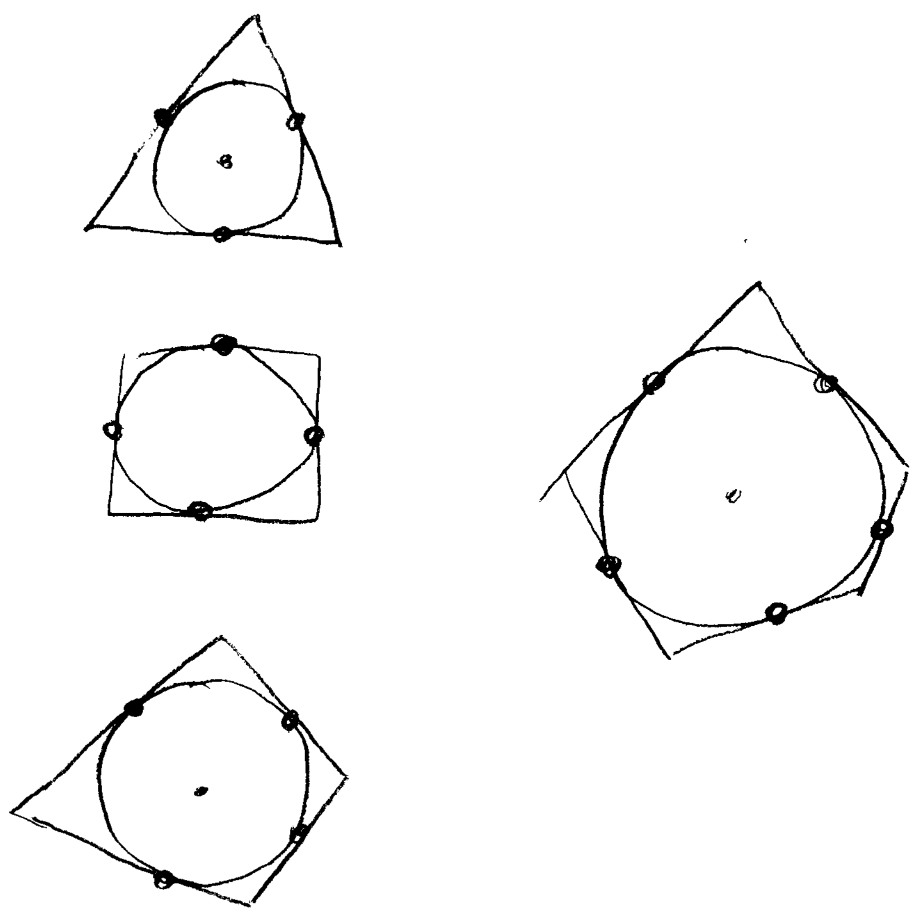


Circles can be tangent to other circles.

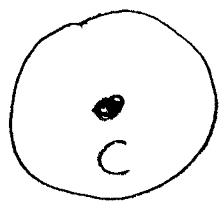


Circumscribed polygons must have <u>every</u> side tangent to the inscribed circle.



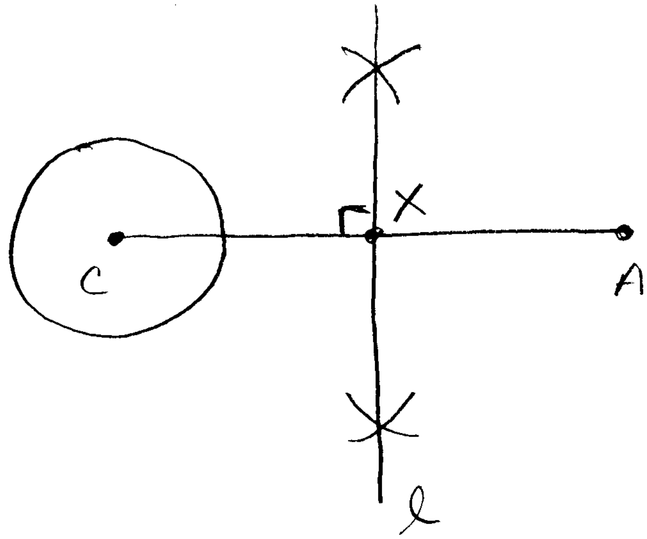
<u>Construction:</u> A line tangent to a circle through some point exterior to the circle. (Pg 554)

① Construct a circle, label the center C



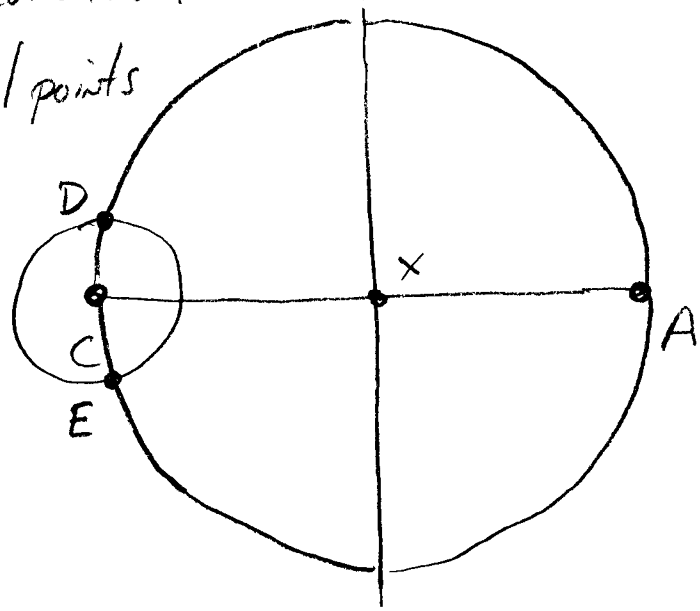
② Draw point A outside circle C then draw $\overline{CA}$

(3.) Construct the perpendicular bisector of $\overline{CA}$ and label it line l. Label the point of intersection of l and $\overline{CA}$ as point X.

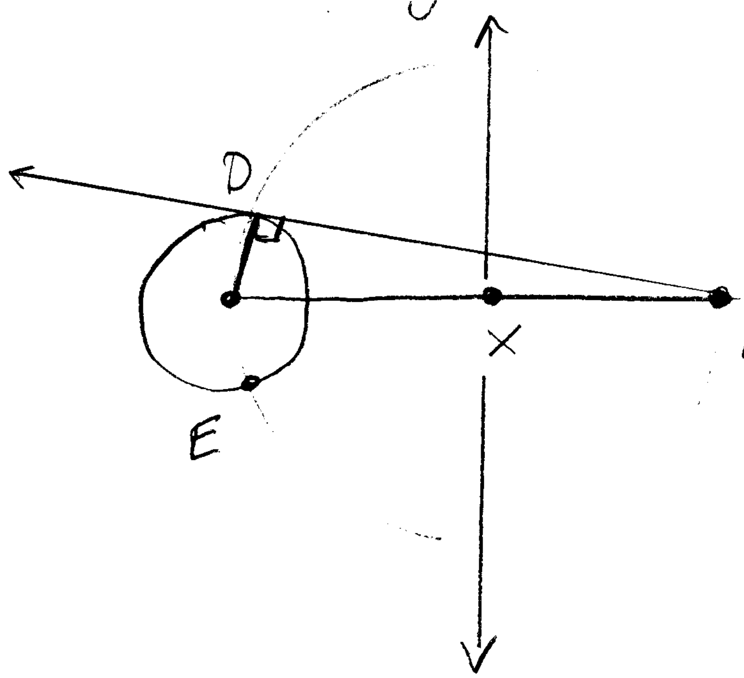


(4) Construct circle X with radius XC

Label points where circles intersect as D, E



④ Draw tangent line $\overline{AD}$.
$\triangle ADC$ is inscribed in a semicircle
so $\angle ADC$ is a right angle $\therefore \overline{AD}$
is a tangent.



Homework: Pg 556 # 8, 9, 12, 14, 15
Pg 557 # 29, 30.