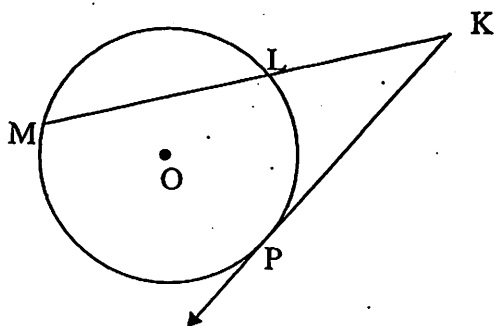
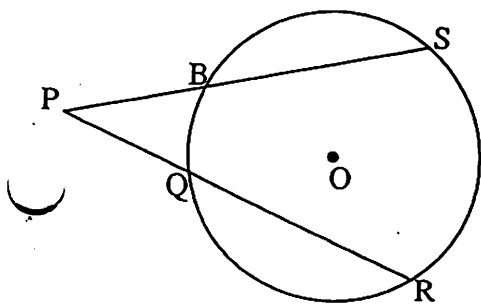


Day 3 Circles Practice

- 1.) In the diagram below secant $\overline{KLM}$ and tangent $\overline{KP}$ are drawn to circle O. If $m\widehat{LP} = 50$ and the measure $m\angle PKM = 47$, find the measure of $m\widehat{MP}$.

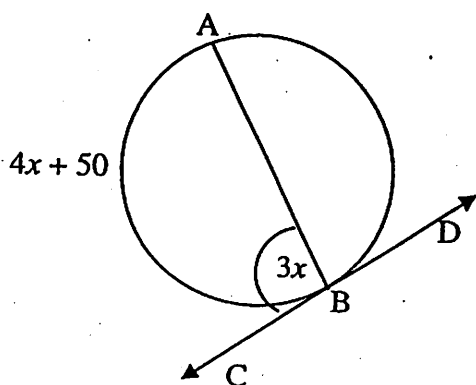


- 2.) In circle O, secants $\overline{PBS}$ and $\overline{PQR}$ are drawn. If $m\angle SPR = 65$ and $m\widehat{BQ} = 43$, find $m\widehat{SR}$.

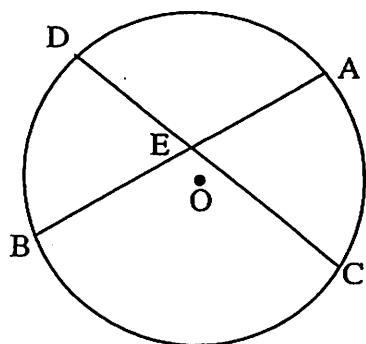


- 3.) In circle O, chords $\overline{CH}$ and $\overline{AD}$ intersect at point Q inside the circle. If $m\angle AQH = 51$ and $m\widehat{CD} = 64$ find $m\widehat{AH}$. (You must draw the picture)

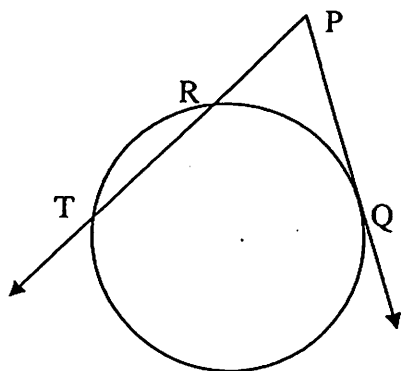
- 4.) If chord $\overline{AB}$ tangent $\overline{CD}$ are drawn, Solve for x .



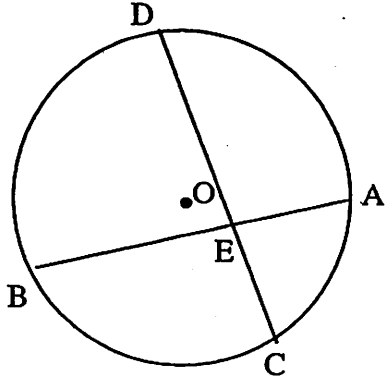
- 5.) If chords $\overline{AB}$ and $\overline{CD}$ intersect at E in circle O , if $m\widehat{BC} = 140$, $m\widehat{AD} = 150$, find $m\angle AEC$.



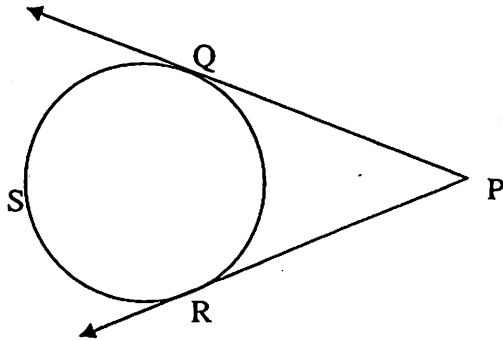
- 6.) If tangent $\overline{PQ}$ and secant $\overline{PRT}$ intersect at P , and $m\widehat{QR} = 75$, $m\widehat{QT} = 112$, find $m\angle P$.



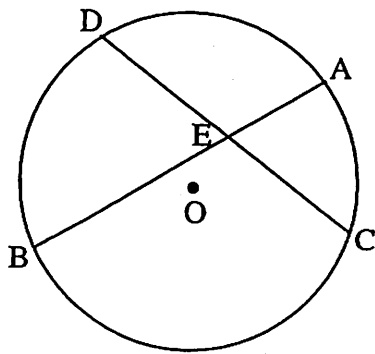
- 7.) Chords $\overline{AB}$ and $\overline{CD}$ intersect at E in circle O. If $m\widehat{AC} = 20$, $m\widehat{DB} = 100$ find the $m\angle BED$.



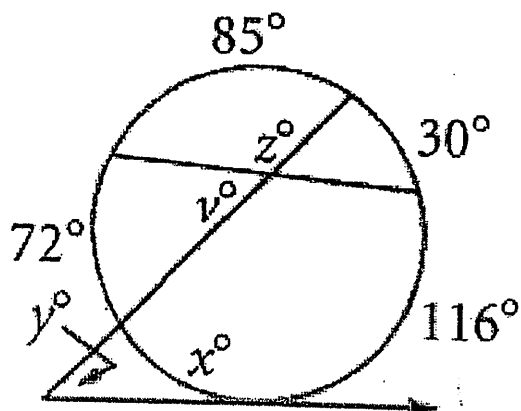
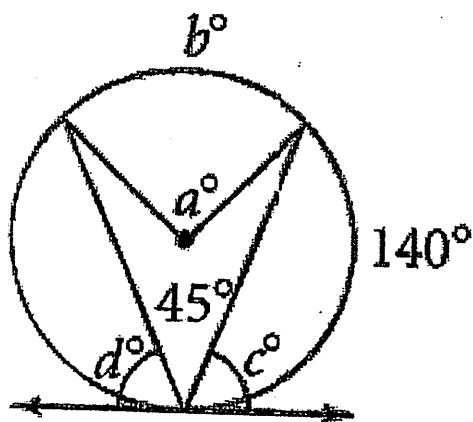
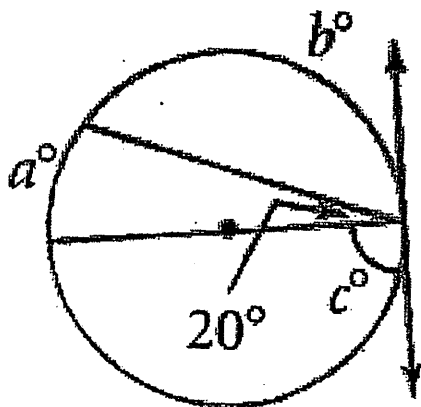
- 8.) Tangents $\overline{PQ}$ and $\overline{PR}$ intersect at P, $m\widehat{QSR} = 200$, find $m\angle P$.



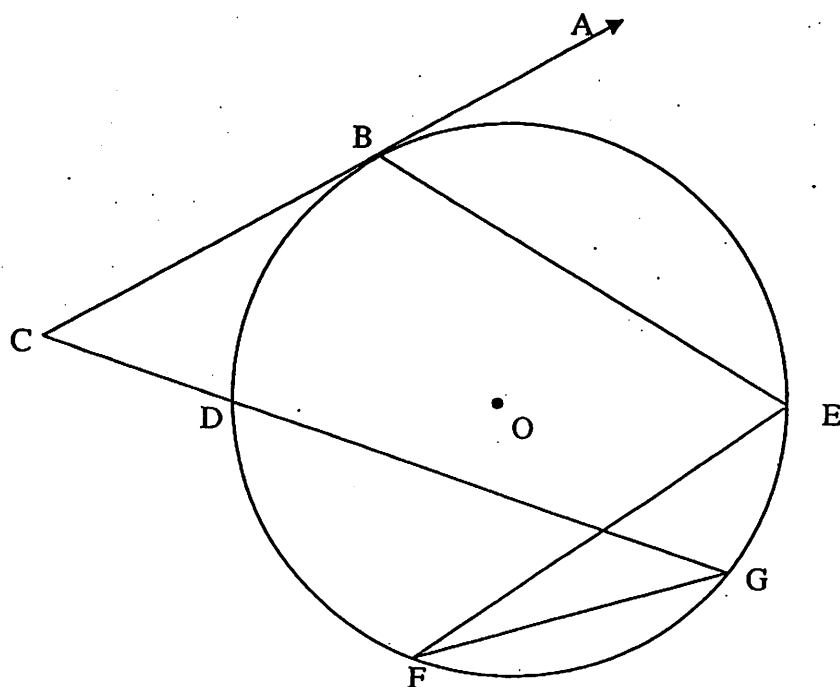
- 9.) Chords $\overline{AB}$ and $\overline{CD}$ intersect at E in circle O. If $m\widehat{AC} = 27$, $m\angle DEB = 54$, find $m\widehat{DB}$.



Assume that lines that appear tangent are tangent. Find the value of each variable.



13.) In Circle O, tangent $\overline{CBA}$, secant $\overline{CDG}$, chords $\overline{BE}$, $\overline{FG}$, $\overline{EF}$ are drawn. The $m\angle BEF = 60$, $m\widehat{BE} = 110$, $m\widehat{GE} = 60$, and $m\angle BCG = 50$



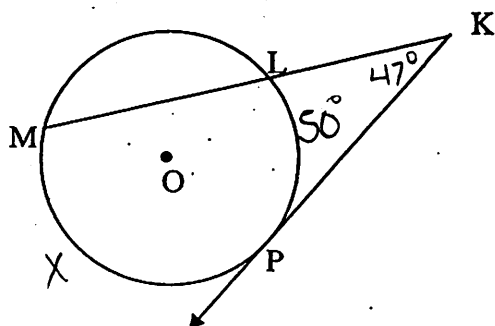
Find:

- $m\widehat{BDF}$
- $m\widehat{BD}$
- $m\angle CHE$
- $m\widehat{FG}$
- $m\angle DGF$
- $m\angle ABE$

Day 3 Circles Practice

Key

- 1.) In the diagram below secant $\overline{KLM}$ and tangent $\overline{KP}$ are drawn to circle O. If $m\widehat{LP} = 50$ and the measure $m\angle PKM = 47$, find the measure of $m\widehat{MP}$.



$$m\angle PKM = \frac{1}{2} (m\widehat{MP} - m\widehat{LP})$$

$$47^\circ = \frac{1}{2} (x - 50)$$

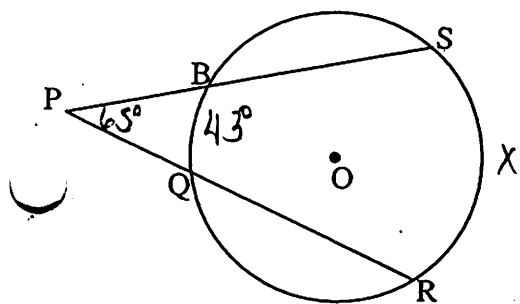
$$47^\circ = \frac{1}{2} x - 25$$

$$72 = \frac{1}{2} x$$

$$144^\circ = x$$

$$m\widehat{MP} = 144^\circ$$

- 2.) In circle O, secants $\overline{PBS}$ and $\overline{PQR}$ are drawn. If $m\angle SPR = 65$ and $m\widehat{BQ} = 43$, find $m\widehat{SR}$.



$$m\angle SPR = \frac{1}{2} (m\widehat{SR} - m\widehat{BQ})$$

$$65^\circ = \frac{1}{2} (x - 43)$$

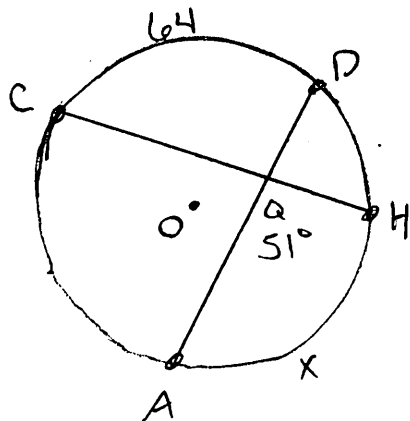
$$65 = \frac{1}{2} x - 21.5$$

$$86.5 = \frac{1}{2} x$$

$$173 = x$$

$$m\widehat{SR} = 173^\circ$$

- 3.) In circle O, chords $\overline{CH}$ and $\overline{AD}$ intersect at point Q inside the circle. If $m\angle AQH = 51$ and $m\widehat{CD} = 64$ find $m\widehat{AH}$. (You must draw the picture)



$$m\angle AQH = \frac{1}{2} (m\widehat{CD} + m\widehat{AH})$$

$$51 = \frac{1}{2} (64 + x)$$

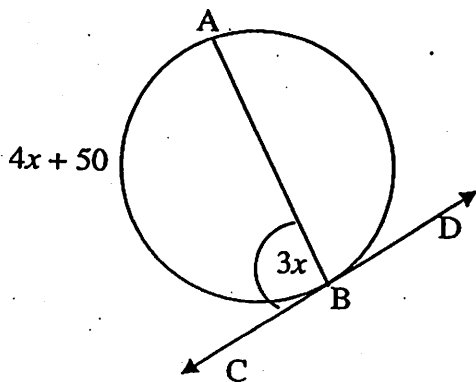
$$51 = 32 + \frac{1}{2} x$$

$$19 = \frac{1}{2} x$$

$$38 = x$$

$$m\widehat{AH} = 38^\circ$$

- 4.) If chord $\overline{AB}$ tangent $\overline{CD}$ are drawn, Solve for x .



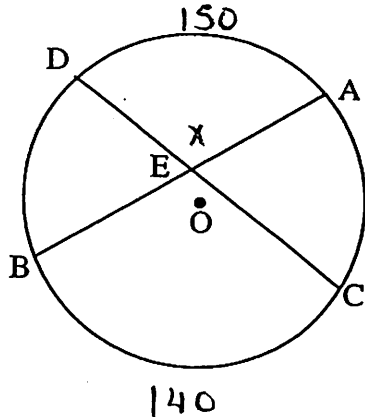
$$m\angle ABC = \frac{1}{2} m\widehat{AB}$$

$$3x = \frac{1}{2}(4x + 50)$$

$$3x = 2x + 25$$

$$x = 25$$

- 5.) If chords $\overline{AB}$ and $\overline{CD}$ intersect at E in circle O , if $m\widehat{BC} = 140$, $m\widehat{AD} = 150$, find $m\angle AEC$.



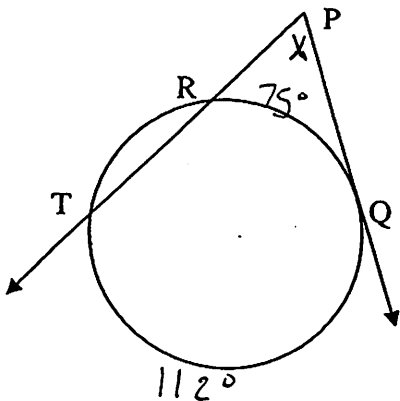
$$m\angle AEC = \frac{1}{2}(m\widehat{AD} + m\widehat{BC})$$

$$x = \frac{1}{2}(150 + 140)$$

$$x = 145^\circ$$

$$m\angle AEC = 35^\circ$$

- 6.) If tangent $\overline{PQ}$ and secant $\overline{PRT}$ intersect at P , and $m\widehat{QR} = 75$, $m\widehat{QT} = 112$, find $m\angle P$.



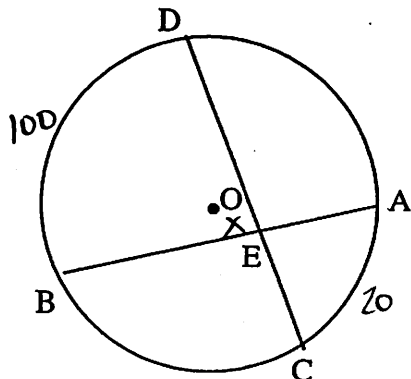
$$m\angle P = \frac{1}{2}(m\widehat{TQ} - m\widehat{RQ})$$

$$x = \frac{1}{2}(112 - 75)$$

$$= 18.5^\circ$$

$$m\angle P = 18.5^\circ$$

7.) Chords $\overline{AB}$ and $\overline{CD}$ intersect at E in circle O. If $m\widehat{AC} = 20$, $m\widehat{DB} = 100$ find the $m\angle BED$.



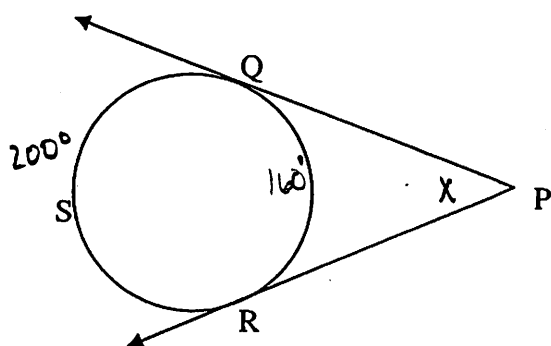
$$m\angle BED = \frac{1}{2}(m\widehat{AC} + m\widehat{DB})$$

$$X = \frac{1}{2}(20 + 100)$$

$$X = 60$$

$$m\angle BED = 60^\circ$$

8.) Tangents $\overline{PQ}$ and $\overline{PR}$ intersect at P, $m\widehat{QSR} = 200$, find $m\angle P$.

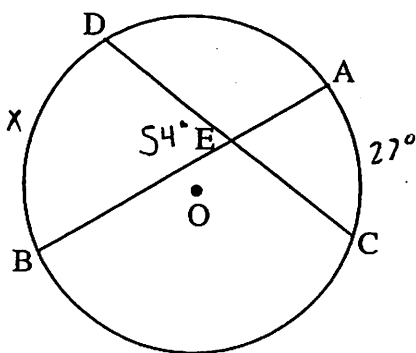


$$m\angle P = \frac{1}{2}(m\widehat{QSR} - m\widehat{QR})$$

$$= \frac{1}{2}(200 - 160)$$

$$m\angle P = 20^\circ$$

9.) Chords $\overline{AB}$ and $\overline{CD}$ intersect at E in circle O. If $m\widehat{AC} = 27$, $m\angle DEB = 54$, find $m\widehat{DB}$.



$$m\angle DEB = \frac{1}{2}(m\widehat{AC} + m\widehat{DB})$$

$$54^\circ = \frac{1}{2}(27 + x)$$

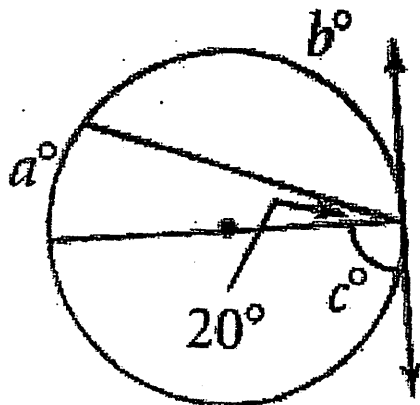
$$54^\circ = 13.5 + \frac{1}{2}x$$

$$40.5 = \frac{1}{2}x$$

$$81 = x$$

$$m\widehat{DB} = 81^\circ$$

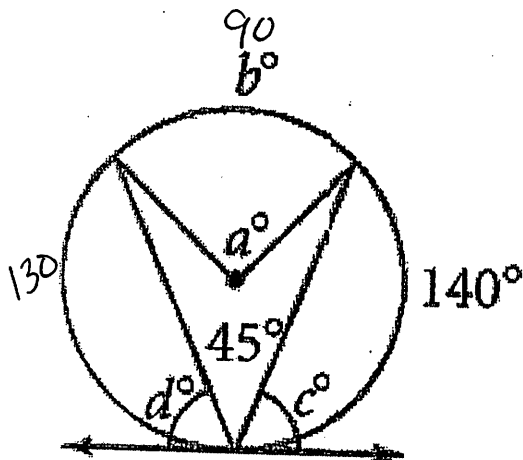
Assume that lines that appear tangent are tangent. Find the value of each variable.



$$a = 40^\circ$$

$$b = 180^\circ - 40^\circ = 140^\circ$$

$$c = \frac{1}{2}(180^\circ) = 90^\circ$$

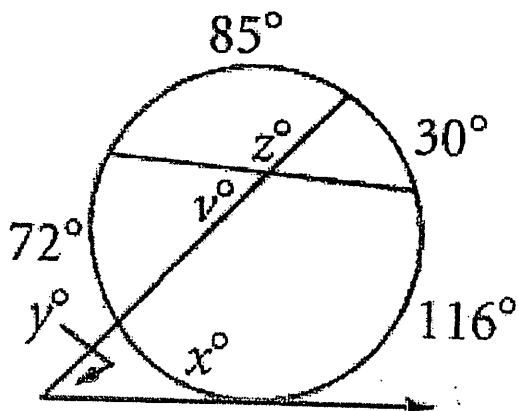


$$c = 70^\circ$$

$$d = 75^\circ$$

$$b = 2(45^\circ) = 90^\circ$$

$$a = 90^\circ$$



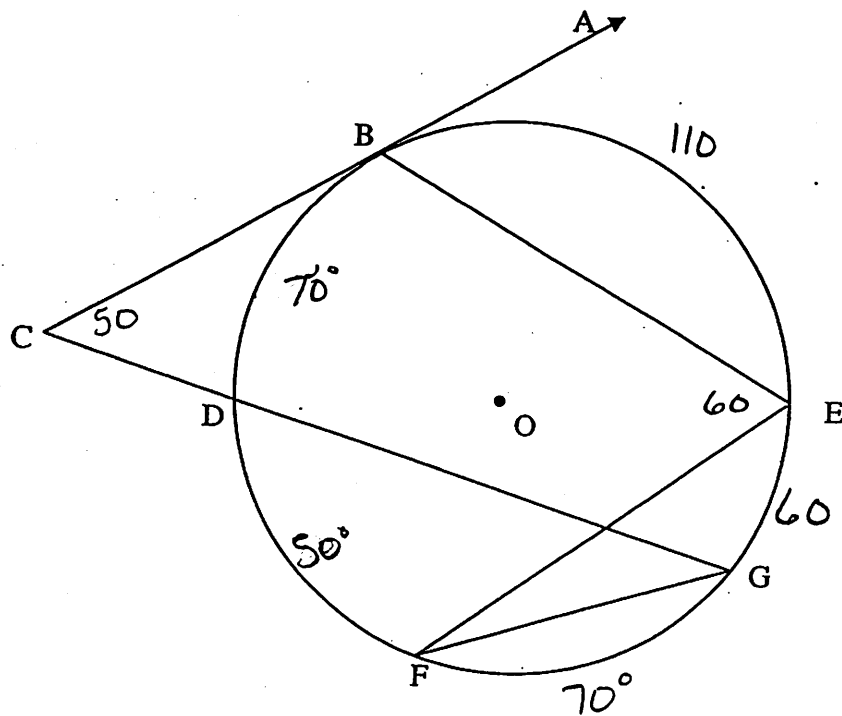
$$x = 360 - (72 + 85 + 30 + 116) = 57^\circ$$

$$y = \frac{1}{2}(146 - 57) = 44.5^\circ$$

$$v = \frac{1}{2}(72 + 30) = 51^\circ$$

$$z = 180 - 51 = 129^\circ$$

- 13.) In Circle O, tangent $\overline{CBA}$, secant $\overline{CDG}$, chords $\overline{BE}$, $\overline{FG}$, $\overline{EF}$ are drawn. The $m\angle BEF = 60$, $m\widehat{BE} = 110$, $m\widehat{GE} = 60$, and $m\angle BCG = 50$



Find:

a) $m\widehat{BDF} = 2(m\angle BEF) = 120^\circ$

b) $m\widehat{BD} \rightarrow \angle C = \frac{1}{2}(m\widehat{BEG} - m\widehat{BD}) \rightarrow 50 = \frac{1}{2}(170 - x) \rightarrow x = 70^\circ$

~~$m\angle CHE$~~

d) $m\widehat{FG} = 70^\circ$

e) $m\angle DGF = 25^\circ$

f) $m\angle ABE = \frac{1}{2}(110^\circ) = 55^\circ$