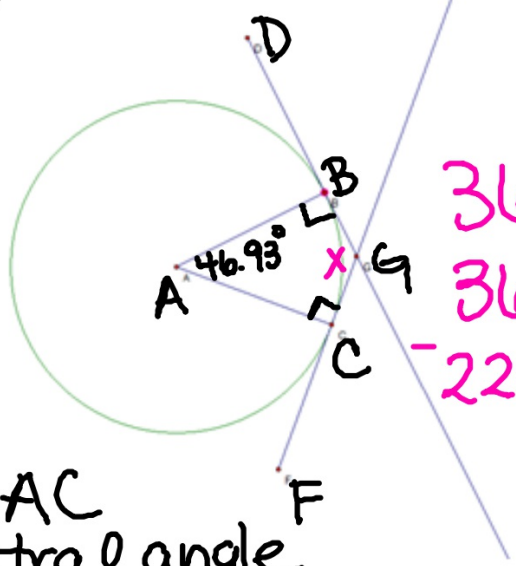
If m of $\angle BAC = 46.93°$ find the m of $\angle BGC$.

$\overline{AC}$ $\overline{AB}$ > Radii



$\angle ABG > 90°$
$\angle ACG$ Thm 12.1

$360 = 90+90+46.93+X$
$360 = 226.93+X$
$-226.93 \quad -226.93$

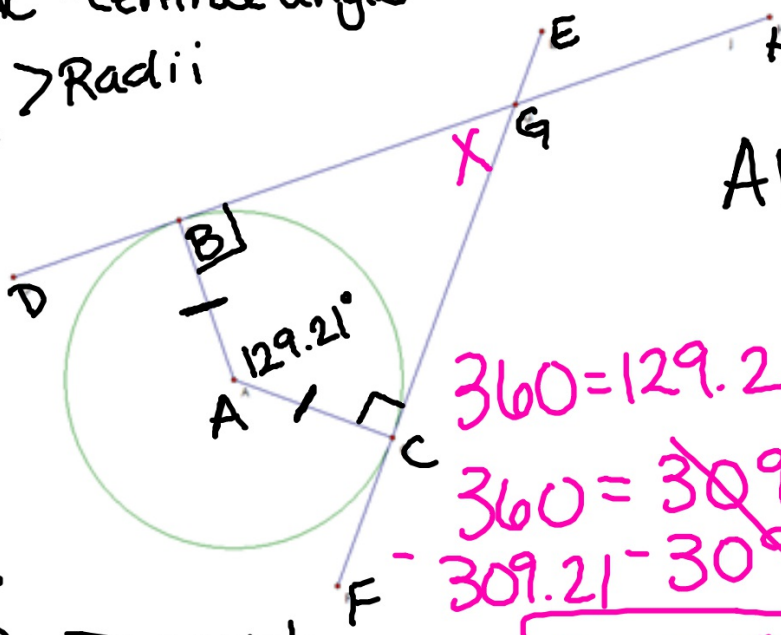
$133.07° = X$

$\angle BAC$
central angle

$\overrightarrow{DB}$ $\overrightarrow{FC}$ > Tangent lines

B and C – Points of Tangency

If m of $\angle BAC = 129.21°$ find the m of $\angle BGC$.



∠BAC - central angle

$\overline{AC}$ > Radii
$\overline{AB}$

∠ABG > 90°
∠ACG > 90° Thm 12.1

ABCG is a Kite

360 = 129.21 + 90 + 90 + X

360 = 309.21 + X

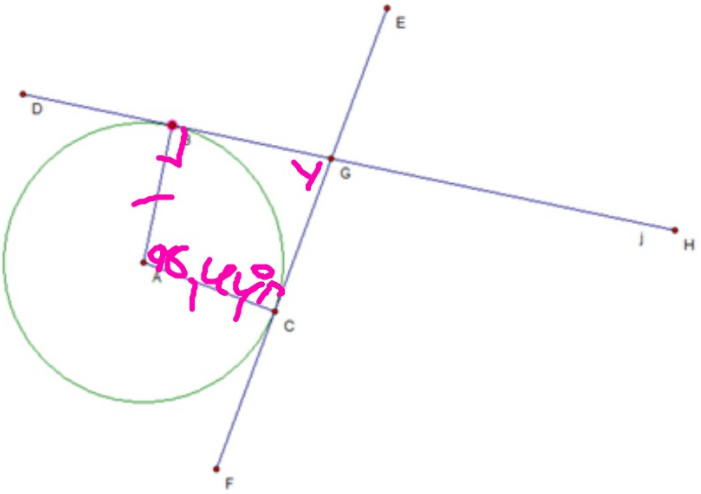
- 309.21 - 309.21

50.79° = X

$\overleftrightarrow{DB}$ > Tangent lines
$\overleftrightarrow{FC}$

B > Points of tangency
C

If m of $\angle BAC = 98.44°$ find the m of $\angle BGC$.



$X = 81.56$

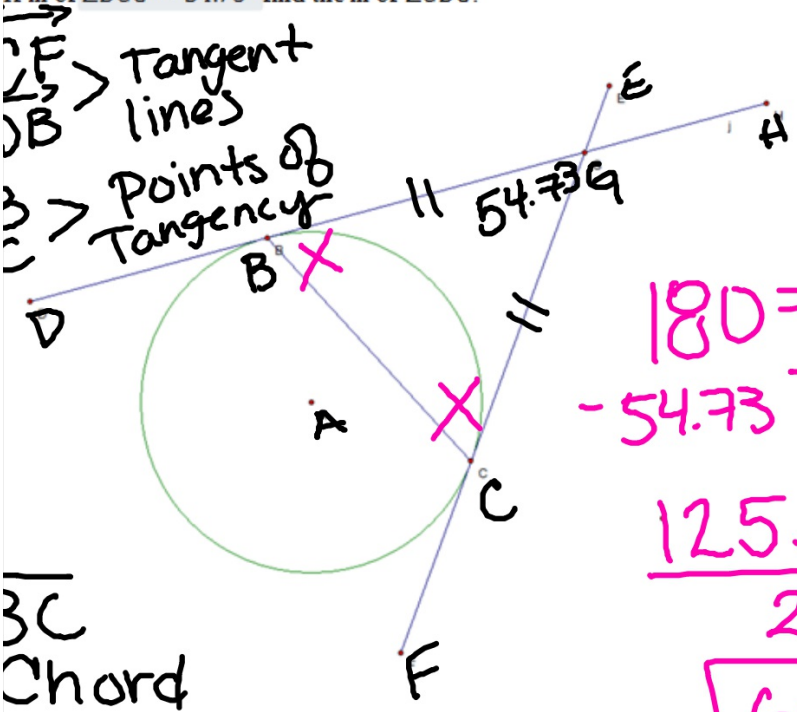
$360 = 98.44 + 90 + 90 + X$

$360 = 278.44 + X$

$-278.44 \quad -278.44$

$81.56 = X$

If m of $\angle BGC = 54.73°$ find the m of $\angle GBC$.



$\overrightarrow{CF}$ > Tangent lines

$\overrightarrow{DB}$ >

> Points of Tangency

$\overline{BC}$ Chord

$\overline{BG} \cong \overline{CG}$ Thm 12.3

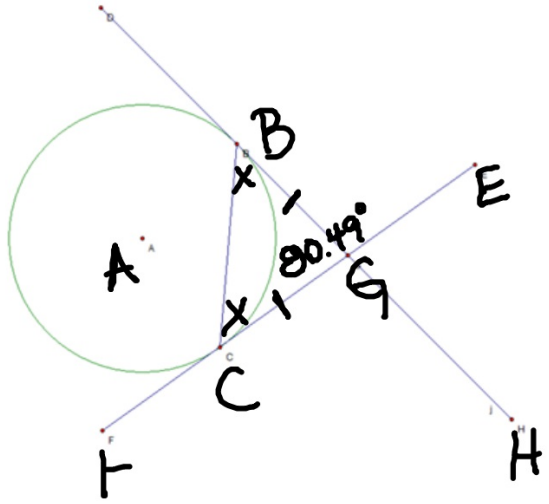
$180 = 54.73 + 2x$

$-54.73 \quad -54.73$

$\frac{125.27}{2} = \frac{2x}{2}$

$62.65° = x$

If m of $\angle BGC = 80.49°$ find the m of $\angle GBC$.

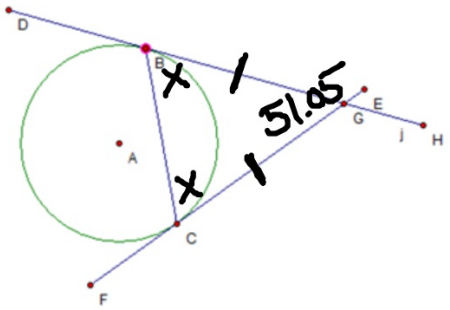


$$180 = 80.49 + 2x$$

$$\frac{99.51}{2} = \frac{2x}{2}$$

$$x = 49.8°$$

If m of $\angle BGC = 51.05°$ find the m of $\angle GBC$.



$180 = 51.05 + 2X$

$\frac{128.95}{2} = \frac{2X}{2}$

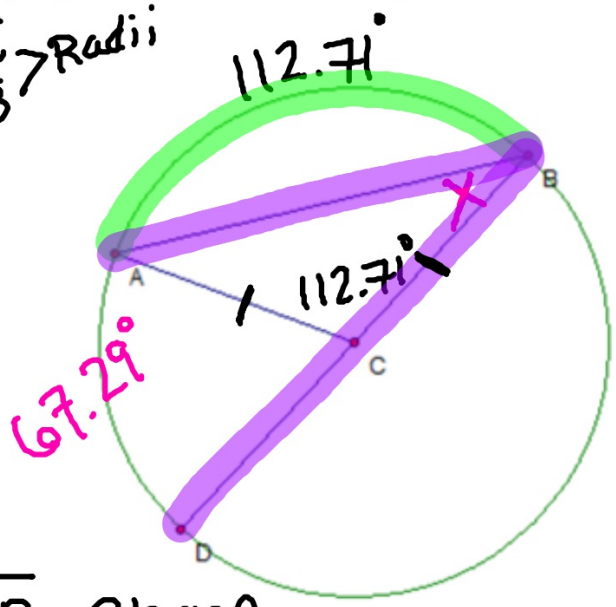
$64.5 = X$

If m of $arc\ AB = 112.71°$ find the m of $\angle ABC$.

$\angle ACB$ central angle

$\overline{AC}$ > Radii

$\overline{CB}$



$\overline{AB}$ Chord

$\overline{BD}$ Chord
Diameter

$\angle ABD$ Inscribed angle

1/2 measure of its arc

$180 - 112.71 = 67.29°$

$\frac{67.29}{2} = 33.65°$

$X = 33.65°$