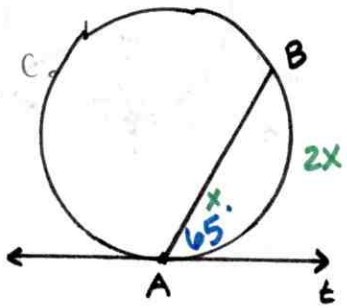
10.5

1) The points A, B, C, and D are on a circle and $\overleftrightarrow{AB}$ intersects $\overleftrightarrow{CD}$ at P. If the $m\angle APC = \frac{1}{2}(m\overset{\frown}{BD} - m\overset{\frown}{AC})$, then P is <u>outside</u> the circle.

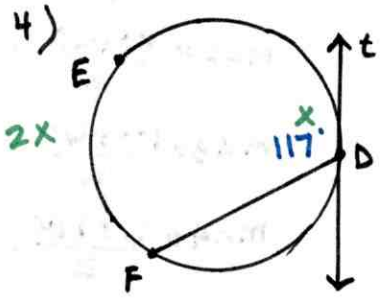
3)



$m\overset{\frown}{AB} = 2(65)$

$\boxed{m\overset{\frown}{AB} = 130^\circ}$

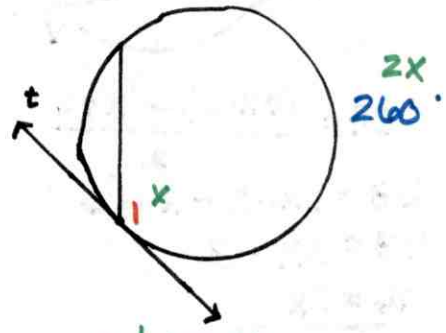
4)



$m\overset{\frown}{DEF} = 2(117)$

$\boxed{m\overset{\frown}{DGF} = 234^\circ}$

5)



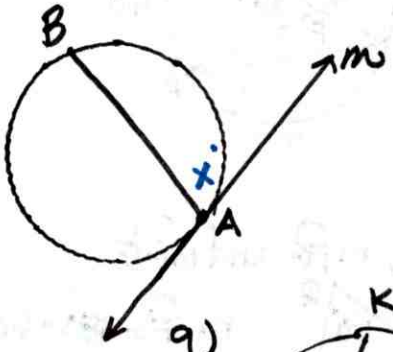
$m\angle 1 = \frac{1}{2}(260)$

$\boxed{m\angle 1 = 130^\circ}$

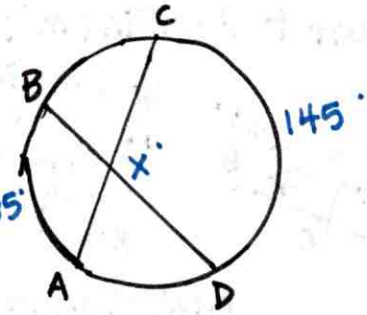
6) The diagram is not drawn to scale. $\overline{AB}$ is any chord that is not a diameter of the circle. Line m is tangent to the circle at Point A. Which statement must be true?

A $x \leq 90$ B $x \geq 90$

C $x = 90$ D ✓ $x \neq 90$



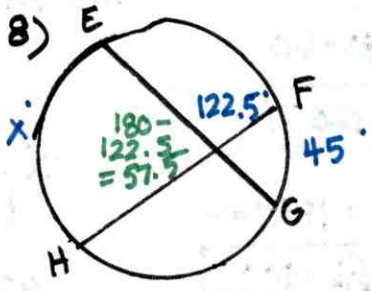
7)



$x = \frac{85+145}{2}$

$\boxed{x = 115^\circ}$

8)

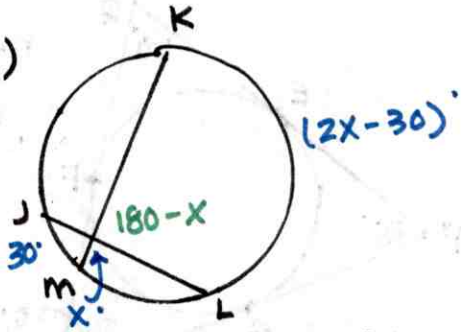


$57.5 = \frac{x+45}{2}$

$115 = x + 45$

$\boxed{x = 70^\circ}$

9)



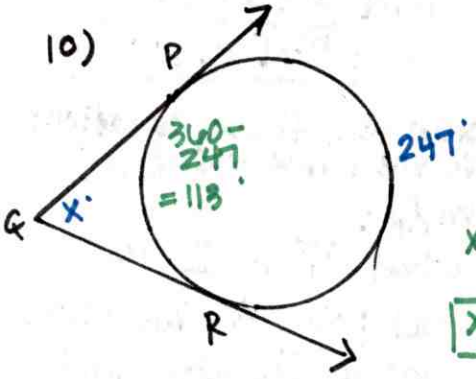
$180 - x = \frac{30 + 2x - 30}{2}$

$180 - x = x$

$180 = 2x$

$\boxed{x = 90^\circ}$

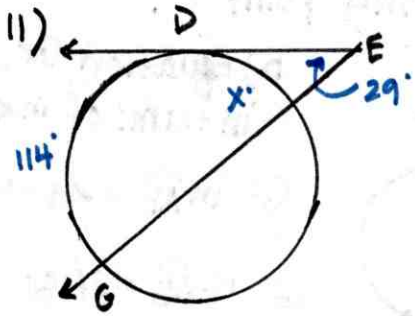
10)



$x = \frac{247-113}{2}$

$\boxed{x = 67^\circ}$

11)



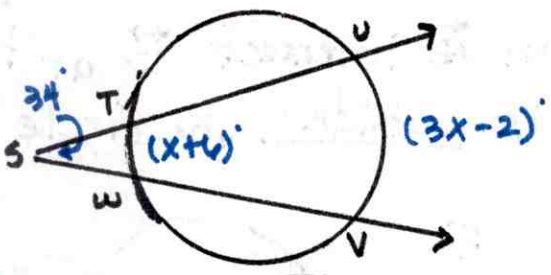
$29 = \frac{114 - x}{2}$

$58 = 114 - x$

$-56 = -x$

$\boxed{x = 56}$

12)



$34 = \frac{(3x-2)-(x+6)}{2}$

$68 = 3x-2-x-6$

$68 = 2x-8$

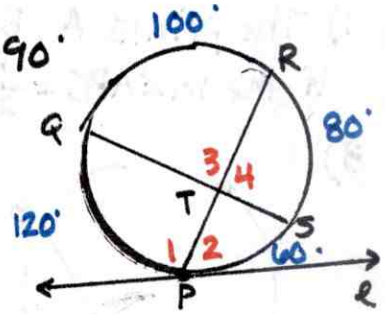
$76 = 2x$

$\boxed{x = 38°}$

13) l is tangent to P. Which is not true?

A $m\angle 1 = 110°$ B $m\angle 2 = 70°$

C $m\angle 3 = 80°$ D ✓ $m\angle 4 = 90°$



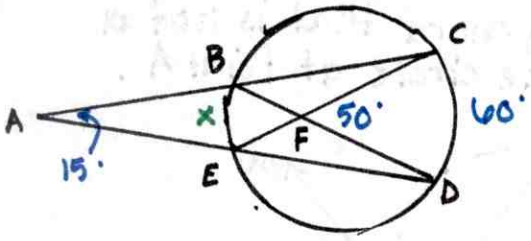
$m\angle 1 = \frac{100+120}{2} = 110°$

$m\angle 2 = \frac{80+60}{2} = 70°$

$m\angle 3 = \frac{100+60}{2} = 80°$

$m\angle 4 = \frac{120+80}{2} = 100°$

14)



✗

$15 = \frac{60-x}{2}$

$30 = 60-x$

$-30 = -x$

$x = 30$

$m\overset{\frown}{BE} = 30$

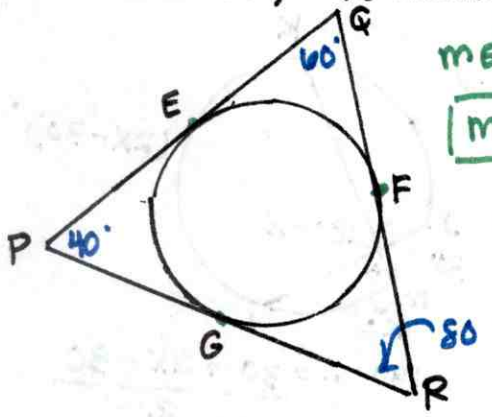
$50 = \frac{30+60}{2}$

$50 = \frac{90}{2}$

$\boxed{50 \neq 45}$

$m\angle CFD = 45°$

17) Find $m\overset{\frown}{EF}$, $m\overset{\frown}{FG}$ and $m\overset{\frown}{GE}$



$m\overset{\frown}{EF} = 180-60$

$\boxed{m\overset{\frown}{EF} = 120°}$

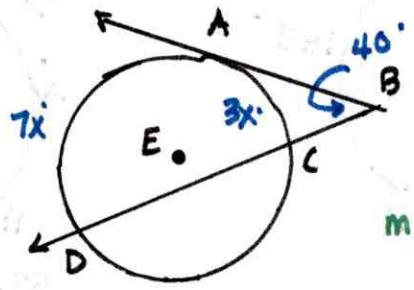
$m\overset{\frown}{FG} = 180-80$

$\boxed{m\overset{\frown}{FG} = 100°}$

$m\overset{\frown}{GE} = 180-40$

$\boxed{m\overset{\frown}{GE} = 140°}$

18) $\overleftrightarrow{BA}$ is tangent to $\odot E$. Find $m\overset{\frown}{CD}$.



$40 = \frac{7x-3x}{2}$

$80 = 7x-3x$

$80 = 4x$

$x = 20$

$m\overset{\frown}{DAC} = 7(20)+3(20)$

$= 140+60$

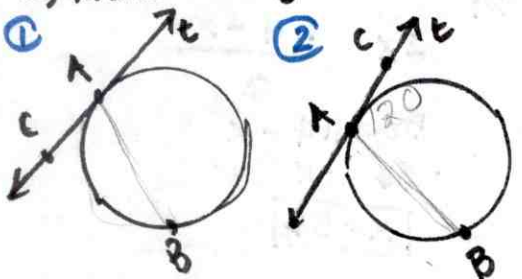
$m\overset{\frown}{DAC} = 200°$

$m\overset{\frown}{CD} = 360-200$

$\boxed{m\overset{\frown}{CD} = 160°}$

19) Points A and B are on a circle and t is tangent line containing A and another point C.

a) Draw 2 diagrams



b) Equation for $m\overset{\frown}{AB}$ in terms of $m\angle BAC$

① $m\overset{\frown}{AB} = 2(m\angle BAC)$

② $m\overset{\frown}{AB} = 2(180-m\angle BAC)$

c) When will these equations give the same value for $m\overset{\frown}{AB}$?

when $\overline{AB}$ is $\perp$ to t at point A. $\overline{AB}$ would be a diameter and the $m\overset{\frown}{AB} = 180°$