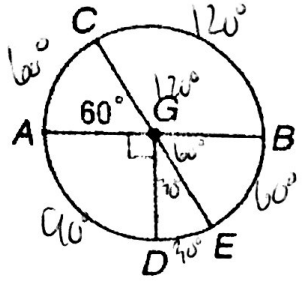
Name: _____
Date: _____
Class: _____

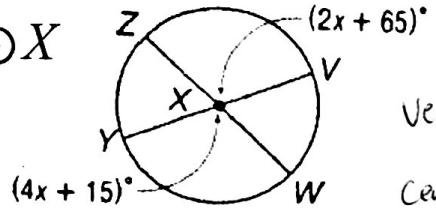
Geometry
Unit 10
HW 10-2

1) 

⊙G

a) Find $m\widehat{BC}$
b) Find m<DGE
c) Find $m\widehat{AD}$

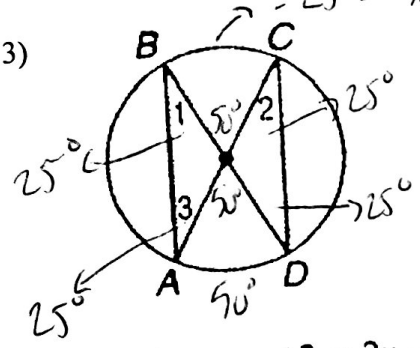
* all are central angles so
They are = to intersected arc
~~inscribed~~ ~~arc~~

2) ⊙X 

Find $m\widehat{ZV}$

Vert ∠'s so =
Cent ∠ = int arc

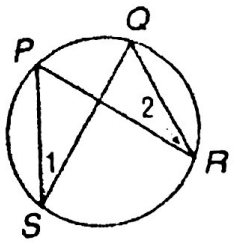
$2x+65 = 4x+15$
$2x = 50$
$x = 25$
$2(25)+65 = \boxed{115° = m\widehat{ZV}}$

3) 

$= 25 \cdot 2 = 50°$

If m<BDC = 25°, and the point is the center of the circle. Find m<1, m<2, and m<3

4) $m\angle 1 = x, m\angle 2 = 2x - 13$



Find m<1 and m<2

* inscribed ∠'s w/ same arc
so they are =

$x = 2x - 13$
$x = 13$

$m\angle 1 = m\angle 2 = 13°$

Total $360 - m\widehat{PQ}$

5) Using the diagram for #4, m<1 = 3x + 4, m<2 = $x^2 - 4x + 4$, and $\overline{QR}:\overline{PS}:\overline{RS} = 8:9:14$, find m<SPR.

$\angle 1 \cong \angle 2$ (both inscribed w/ same int arc)

$3x+4 = x^2 - 4x + 4$
$-3x-4 \quad -3x-4$
$0 = x^2 - 7x$
$x(x-7)$
$x = 0 \quad \boxed{x = 7}$

Both work, picking 7

$3(7)+4 = 25$
$m\angle 1 = 25$
So $m\widehat{PQ} = 50°$

$360 - 50 = \boxed{310°}$

$8x+9x+14x = 310$
$31x = 310$
$\boxed{x = 10}$

$m\widehat{SR} = 14(10) = 140°$
$m\angle SPR = \frac{1}{2}(140)$
$= 70°$

6) Using the diagram for #4, state which triangles are similar (the point where segment PR and segment QS cross is point T).

$\angle P \cong \angle Q$ $\quad \triangle PST \sim \triangle QRT$

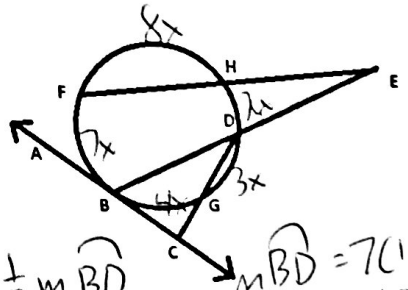
$\angle S \cong \angle R$

7) In #6, if PS = 8, TQ = 5, and QR = 10 what is the ratio of the areas of these 2 triangles?

$\overline{PS}$ corr to $\overline{QR}$ $\quad SF \to \frac{8}{10}$

area ratio $= \left(\frac{8}{10}\right)^2 = \boxed{\frac{64}{100}}$ or $\boxed{\frac{16}{25}}$

8)



$\widehat{BG}:\widehat{GD}:\widehat{HD}:\widehat{HF}:\widehat{FB} = 4:3:2:8:7$

Find m<CBD and m<BDC

$4x+3x+2x+8x+7x = 360$

$24x = 360$

$x = 15$

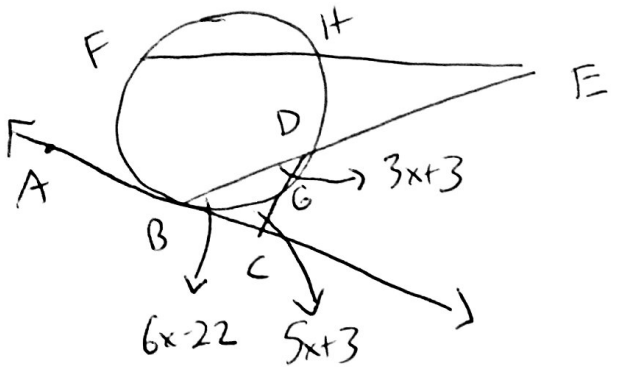
$m\angle CBD = \frac{1}{2}m\widehat{BD}$ $\quad m\widehat{BD} = 7(15) = 105°$

$m\angle BDC = \frac{1}{2}m\widehat{BG}$ $\quad m\widehat{BG} = 4(15) = 60°$

$m\angle CBD = \frac{1}{2}(105) = 52.5°$

$m\angle BDC = \frac{1}{2}(60) = 30°$

9) Using the diagram for #8, m<BDC = 3x + 3, m<DBC = 6x – 22, and m<DCB = 5x + 3, find $m\widehat{BFD}$



* need $m\widehat{BD} \to (m\angle DBC)2$

$6(14)-22 = 62°$

$m\widehat{BD} = 2(62) = 124°$

$m\widehat{BFD} = 360 - 124 = 236°$

$3\angle$s of $\triangle$ = 180

$6x-22+5x+3+3x+3 = 180$

$14x - 16 = 180$

$14x = 196$

$x = 14$