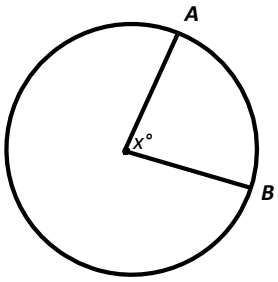
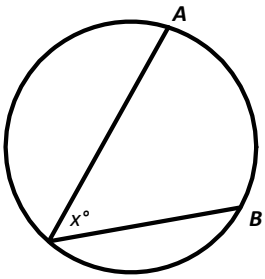
Central and Inscribed Angles



Central Angle - An angle whose vertex is at the center of the circle.

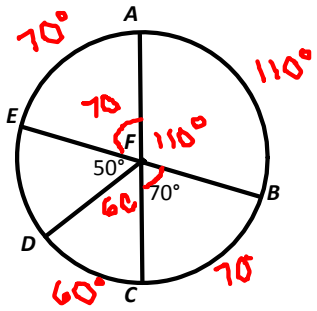
$\measuredangle x = m\overset{\frown}{AB}$



Inscribed Angle - An angle whose vertex is on the circle.

$\measuredangle x = \frac{1}{2} m\overset{\frown}{AB}$

1. If $\overline{AFC}$ and $\overline{EFB}$ are diameters, find the value of each:



a) $m\overset{\frown}{EA}$ 70°

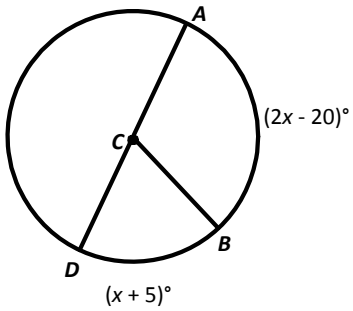
b) $m\overset{\frown}{AB}$ 110°

c) $m\overset{\frown}{DC}$ 60°

d) $m\overset{\frown}{DAC}$ $360-60=300°$

e) $m\overset{\frown}{CAE}$ $70+110+70=250°$

2. Find the value of x and $\measuredangle DCB$.



$2x - 20 + x + 5 = 180°$

$3x - 15 = 180$

$+15 \quad +15$

$\frac{3x}{3} = \frac{195}{3}$

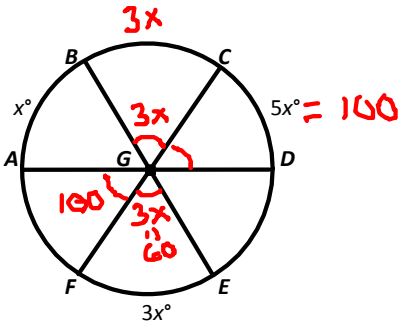
$x = 65°$

$\measuredangle DCB = x + 5$

$= 65 + 5$

$= 70°$

3. Find the value of each:



a) x

$x + 3x + 5x = 180$

$\frac{9x}{9} = \frac{180}{9}$

$x = 20$

b) $\measuredangle CGD$

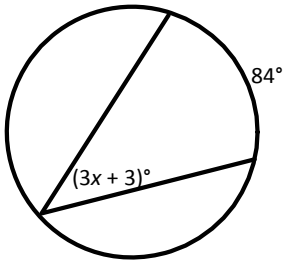
$100°$

c) $\measuredangle AGE$

$100 + 60 = 160$

4. Find the value of *x*.

a)



$3x+3=\frac{84}{2}$

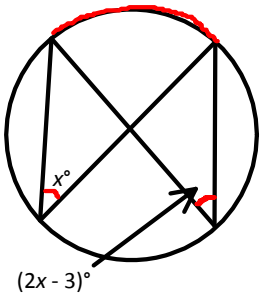
$3x+3=42$

$-3 \quad -3$

$\frac{3x}{3}=\frac{39}{3}$

$x=13$

b)



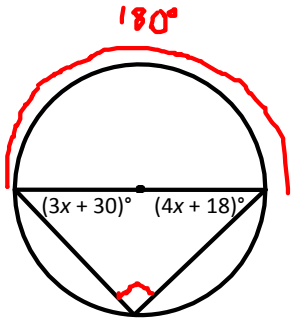
$x=2x-3$

$-2x \quad -2x$

$\frac{-x}{-1}=\frac{-3}{-1}$

$x=3$

c)



$3x+30+4x+18+90=180$

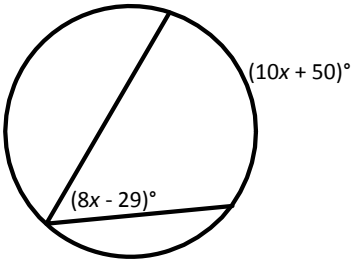
$7x+138=180$

$-138 \quad -138$

$\frac{7x}{7}=\frac{42}{7}$

$x=6$

d)



$8x-29=10x+50$

1 2

$10x+50=2(8x-29)$

$10x+50=16x-58$

$-10x+58 \quad -10x+58$

$\frac{108}{6}=\frac{6x}{6}$

$18=x$