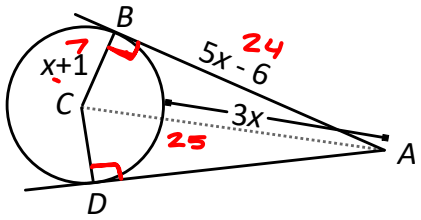


Find the area and perimeter of quadrilateral *ABCD*

$(x+1)^2 + (5x-6)^2 = (4x+1)^2$

$(x^2+2x+1) + (25x^2-60x+36) = 16x^2+8x+1$

$26x^2-58x+37 = 16x^2+8x+1$

$10x^2-66x+36=0$

2

$5x^2-33x+18=0$

90

$-3 \quad -30$

$5x^2-3x-30x+18=0$

$x(5x-3)-6(5x-3)=0$

$(x-6)(5x-3)=0$

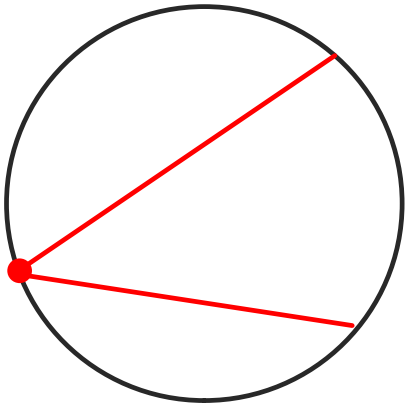
$x=6 \quad x=\frac{3}{5}$ extraneous!

Per: $24+24+7+7=62$ u

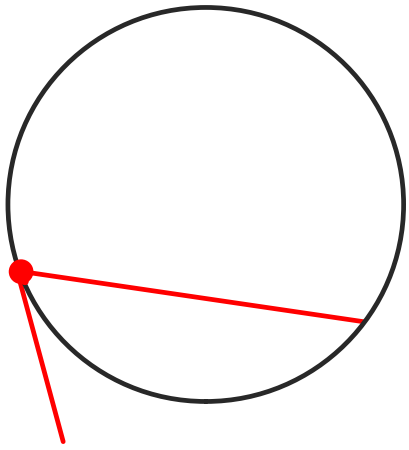
Area: $2\left(\frac{1}{2}(24)(7)\right)=168$ u²

Angles with vertices ON a circle

Inscribed Angle

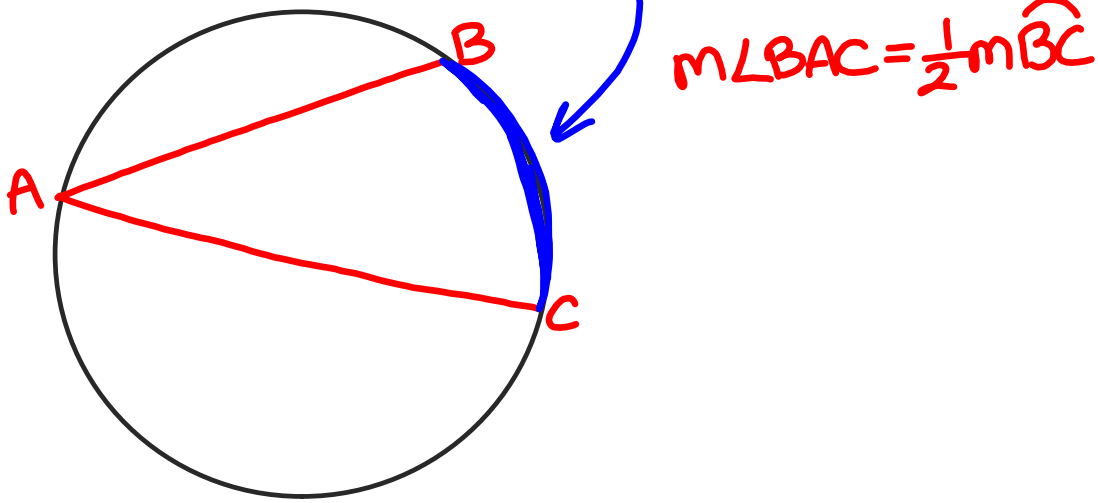


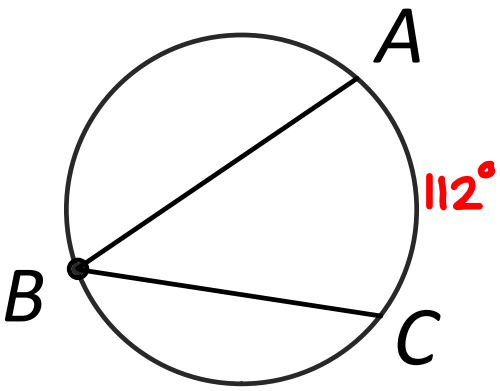
Tangent-Chord Angle



Theorem:

The measure of an angle whose vertex lies on the circle is one-half the measure of its intercepted arc.





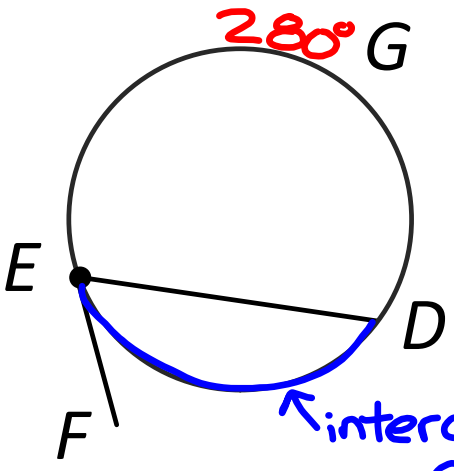
Given: m$\overset{\frown}{AC}$ = 112°

Find: m∠ABC

m∠ABC = ½ m$\overset{\frown}{AC}$

m∠ABC = ½ (112°)

= 56°



Given: m $\overset{\frown}{EGD}$ = 280°

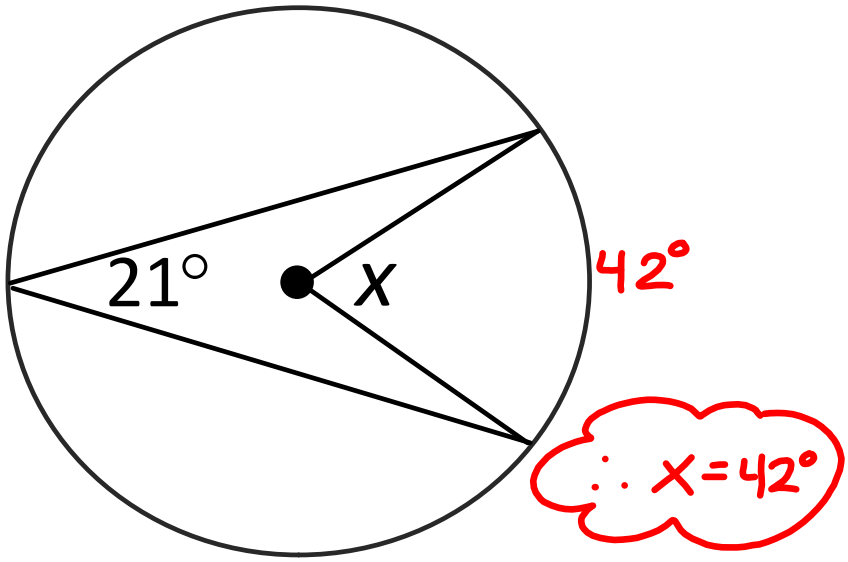
Find: m∠*DEF*

↖intercepted arc

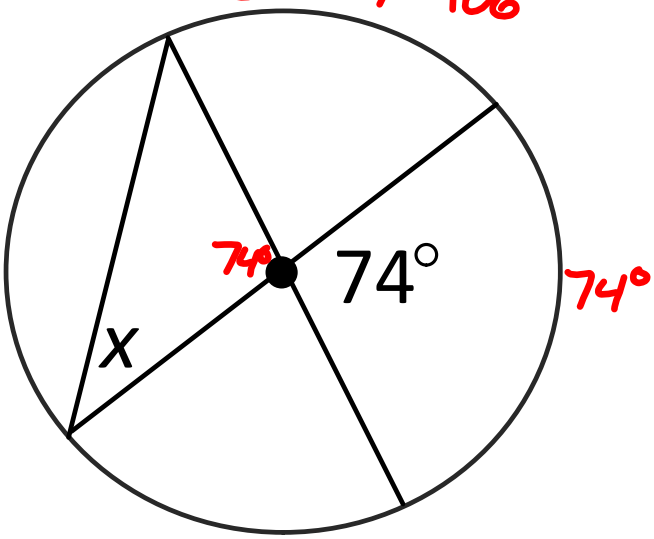
$360° - 280° = 80°$

$m\angle DEF = \frac{1}{2}(80°)$

$= 40°$

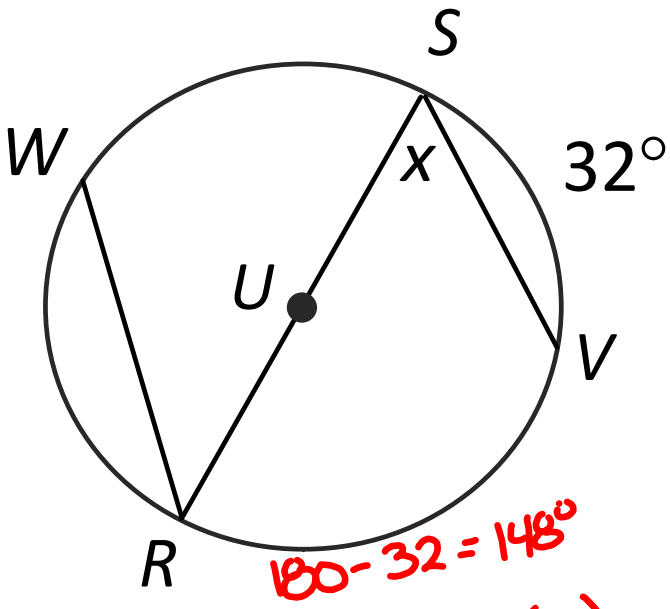


$\therefore x = 42°$



$X = \frac{1}{2}(106)$

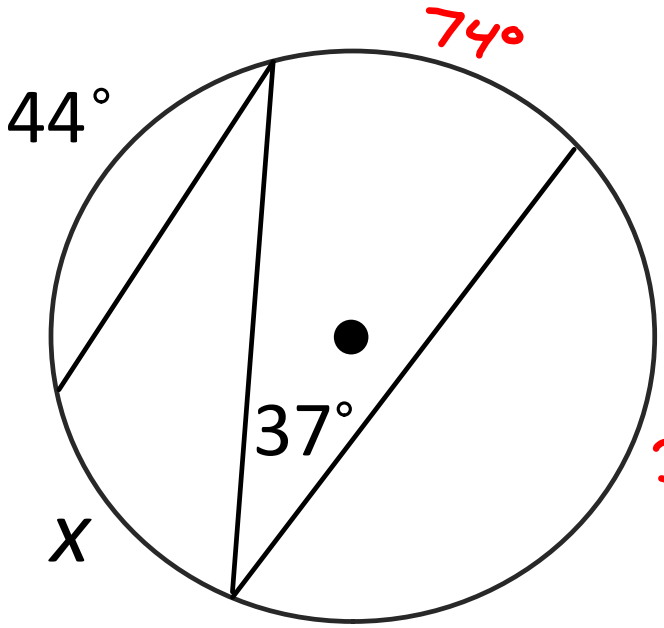
$= 53°$



$180 - 32 = 148°$

$X = \frac{1}{2}(148)$

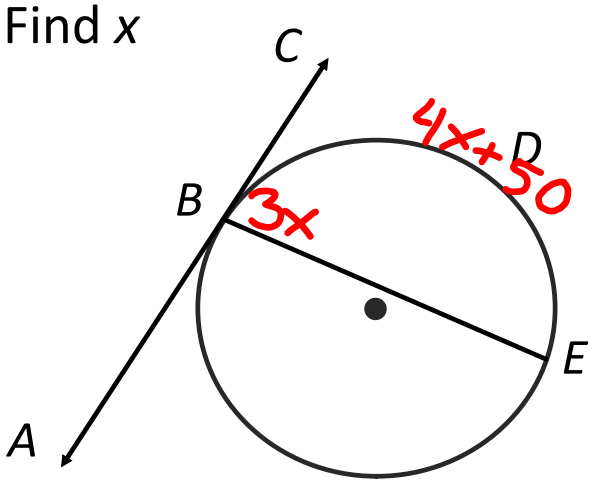
$= 74°$



$360 - 44 - 74 - 109 = x$

$133° = x$

Find x



$m\angle CBE = 3x$

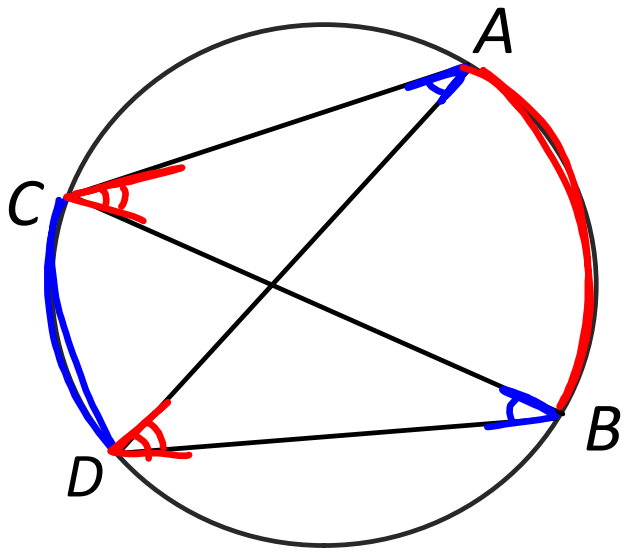
$m\overset{\frown}{BDE} = 4x + 50$

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

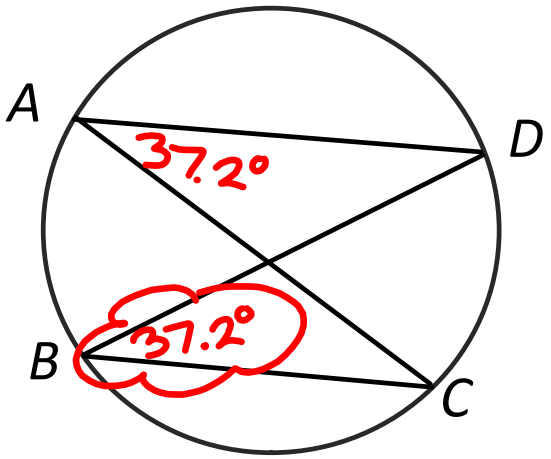
$3x = 2x + 25$

$x = 25$

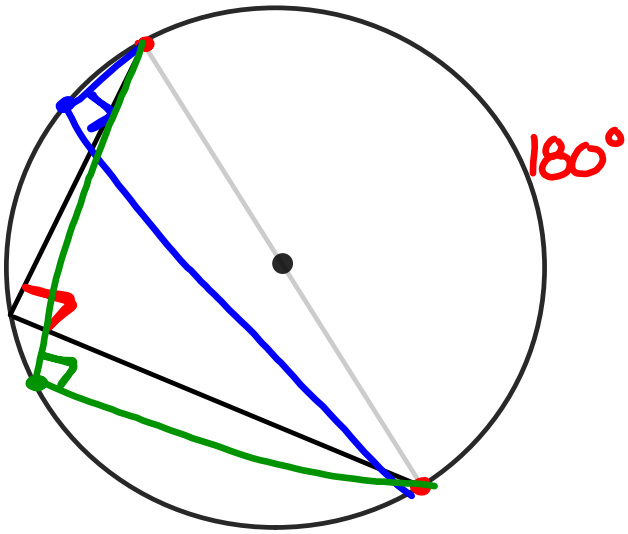
Theorem:
If two inscribed angles of a circle intercept the same arc, then the angles are congruent.



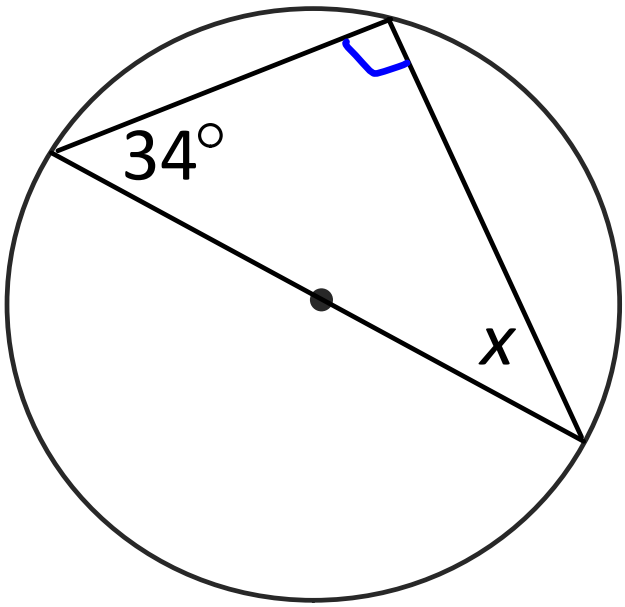
Given: $m\angle DAC = 37.2°$
Find: $m\angle CBD$



Theorem:
An angle inscribed in a semicircle is a right angle



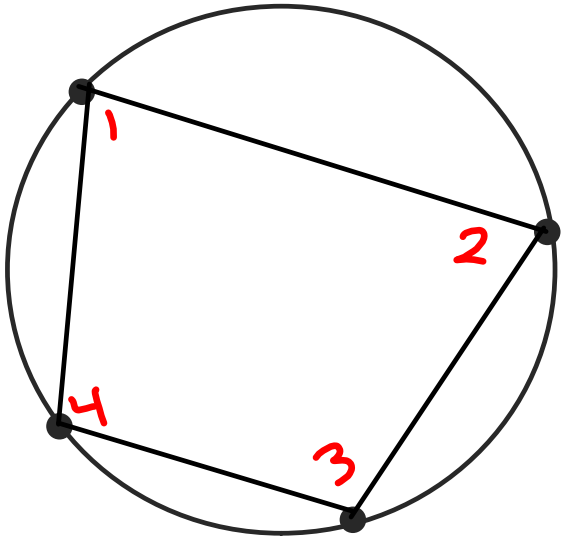
Find *x*



$x + 34° = 90$

$x = 56°$

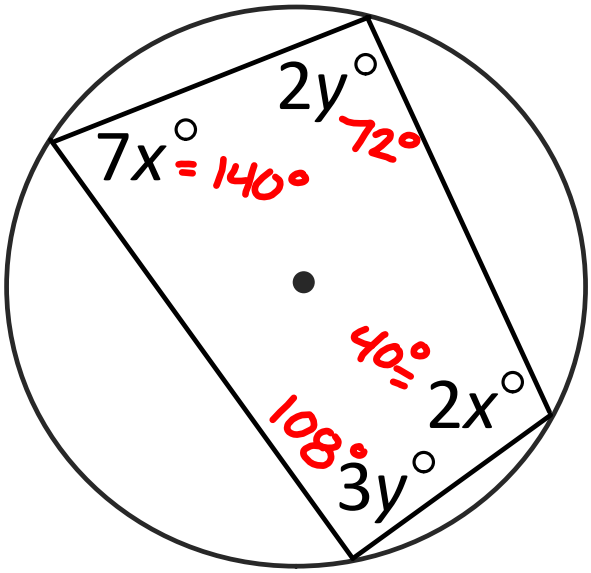
Theorem:
A quadrilateral can be inscribed in a circle iff its opposite angles are supplementary.



$m\angle 1 + m\angle 3 = 180°$

$m\angle 2 + m\angle 4 = 180$

Find the measure of each interior angle of the quadrilateral



$2x + 7x = 180°$

$9x = 180$

$x = 20$

$2y + 3y = 180$

$5y = 180$

$y = 36$