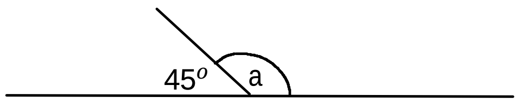
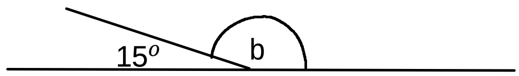
M9 - 10.1 - Opposite/Angle on Line

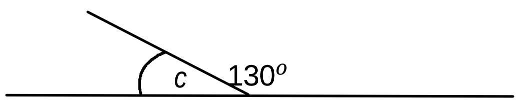
Find the missing angle



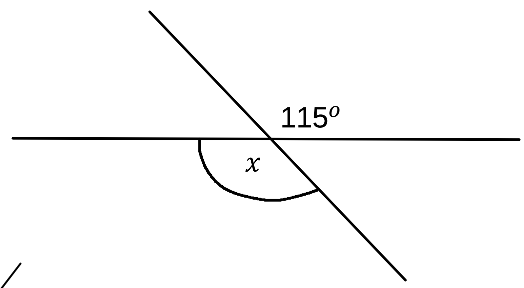
$\angle a =$



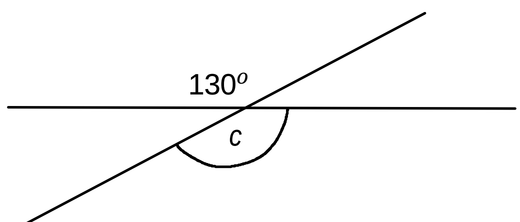
$\angle b =$



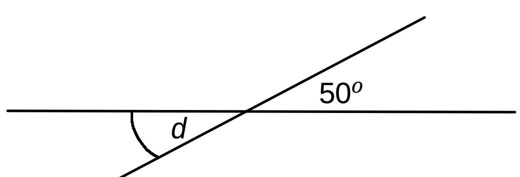
$\angle c =$



$\angle x =$

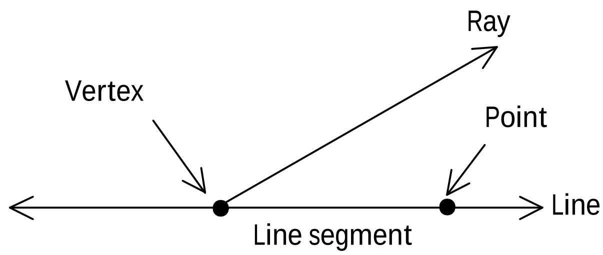


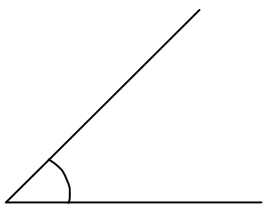
$\angle c =$



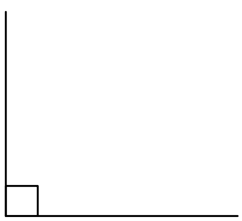
$\angle d =$

M9 - 10.1 - Angles Notes

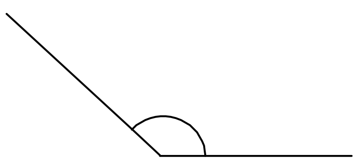




Acute angle: less than 90^o



Right angle: = 90^o

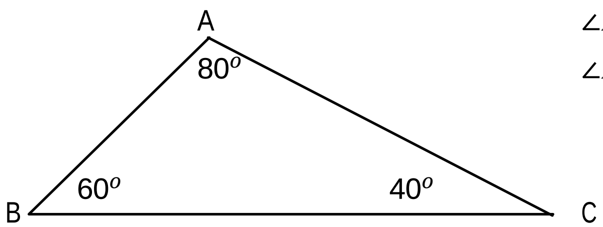


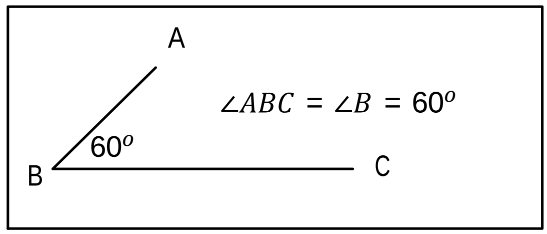
Obtuse angle: greater than 90^o

$\angle ABC = 60^o$

$\angle BAC = 80^o$

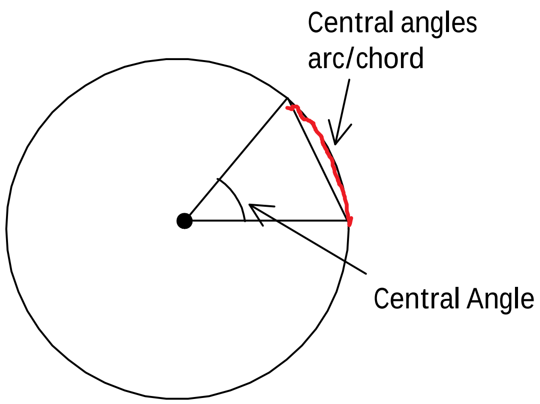
$\angle BCA = 40^o$

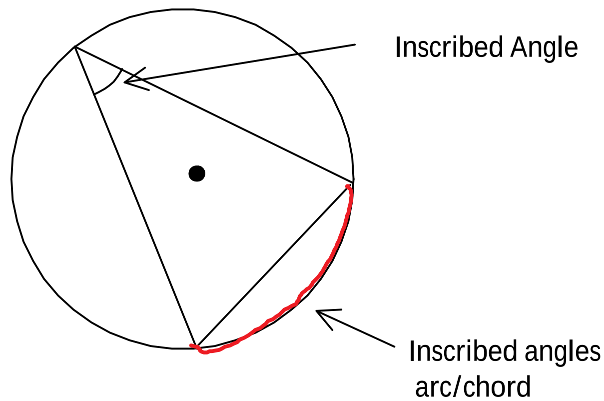


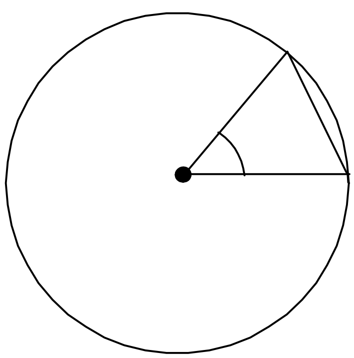


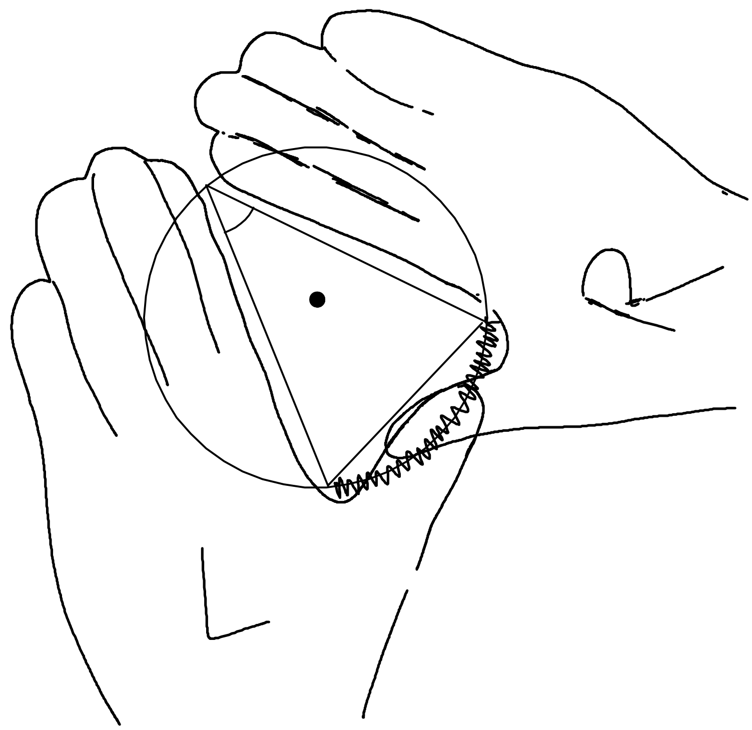
M9 - 10.2 - Identifying Inscribed/Central Angles, Arc/Chords Notes

How do you know where the inscribed/central angle is and where is its arc/chord?



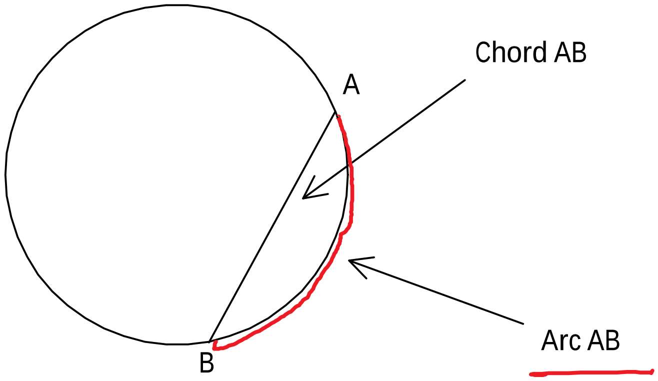


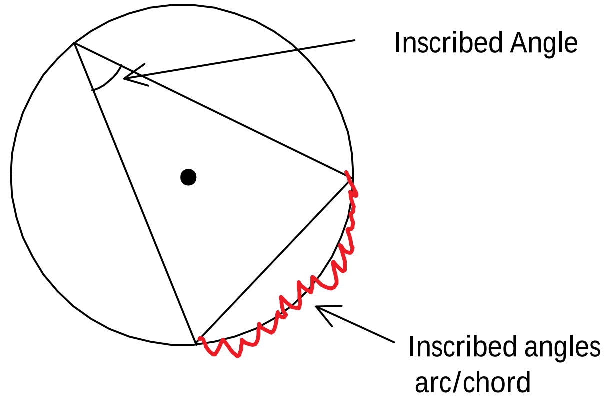


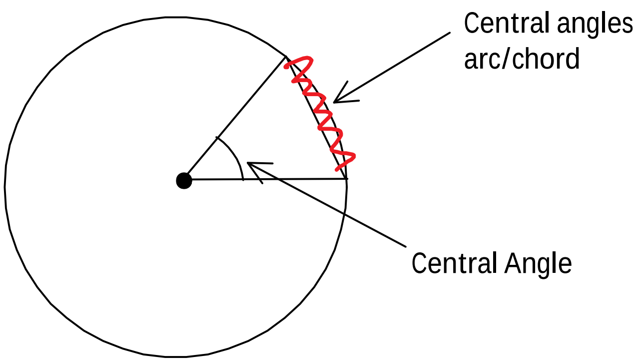


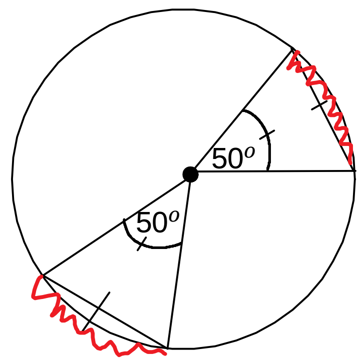
1. Make a slice of pie with your left and right hand.
2. Central/inscribed angle is between your index fingers.
3. Arc/chord is crust of piece of pie.
4. Shade Arc
5. Possibly rotate the page

M9 - 10.2 - Inscribed/Central Angle, Arc/Chord Rules Notes

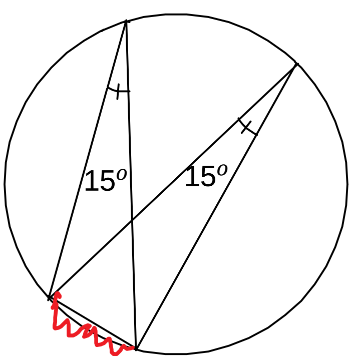




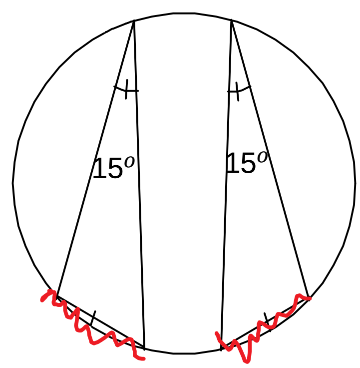




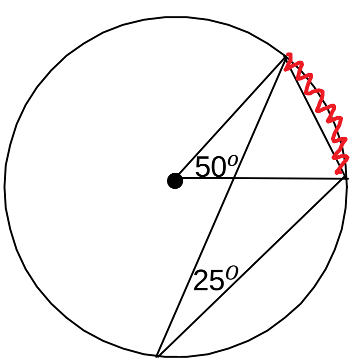
Central angles from equal arc's/chord's are equal.



Inscribed angles from same arc/chord are equal.



Inscribed angles from equal arcs/chords are equal.



Central angle is twice inscribed angle

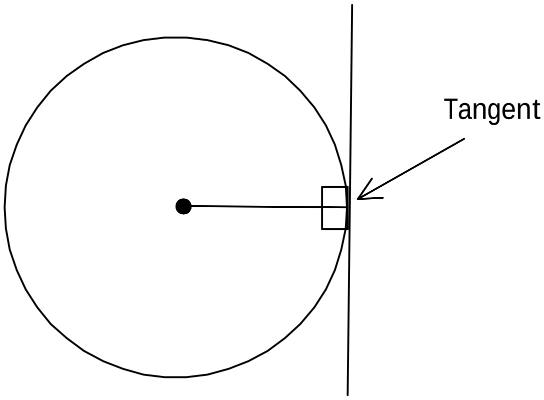
$\angle C = 2 \times \angle I$

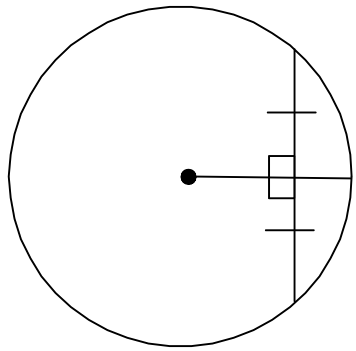
OR

Inscribed angle is half central angle.

$\angle I = \frac{1}{2} \times \angle C$

M9 - 10.2 - Tangents Semi Circle Rules Notes

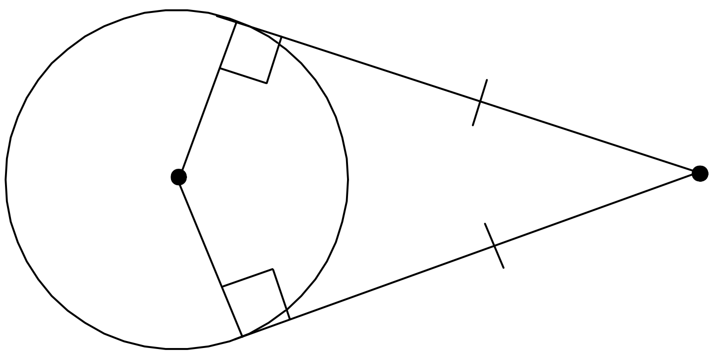




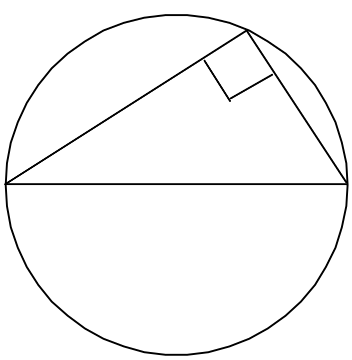
Rule: Perpendicular $\perp$ bisector of a chord passes through center of circle.

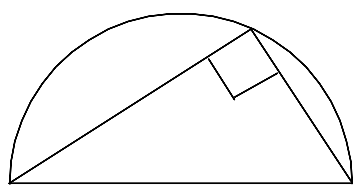
$Rad \perp to\ Tan$

$Rad \perp to\ Chord$

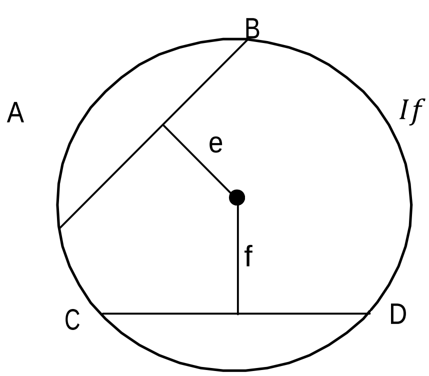


Tangents to exterior points are equal.



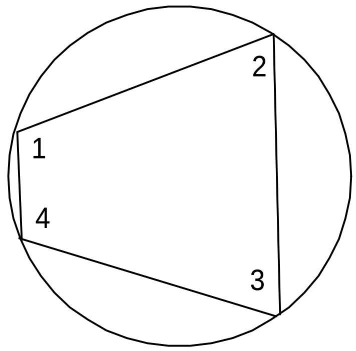


Inscribed angles in a semi-circle equal 90°



$If\ AB = CD, then\ e = f$

M9 - 10.3 - Opposite Angles Inscribed Shapes Notes

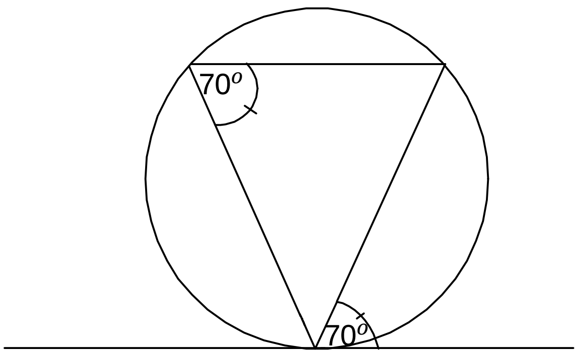


$\angle 1 + \angle 2 + \angle 3 + \angle 4 = 360^o$

$\angle 1 + \angle 3 = 180^o$

$\angle 2 + \angle 4 = 180^o$

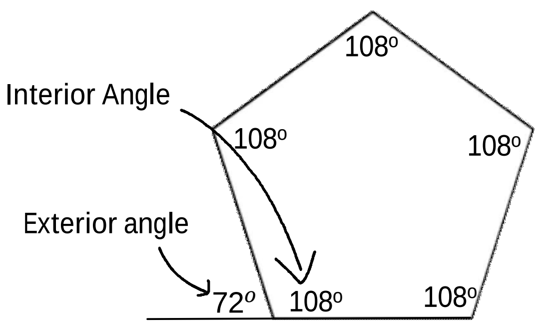
Opposite angles in a quadrilateral sum to 180º.



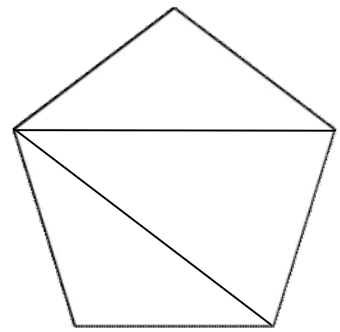
The angle between the tangent and the chord is equal to the inscribed angle on the opposite side of the chord.

M9 - 10.4 - Interior Angles of Polygons Notes

Pentagon: 5 sides, 5 angles



Three triangles = $3 \times 180^o = 540^o$



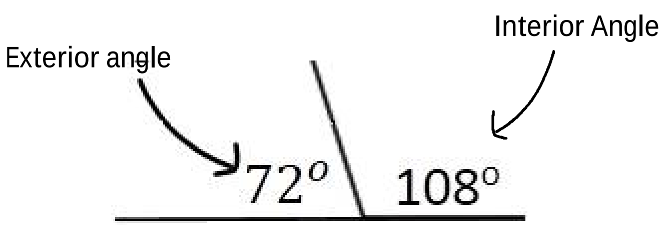
$$\frac{540^o}{5\ angles} = 108^o$$

Draw as many triangles connecting the vertices of the shape. Multiply the number of triangles by 180°. Divide that number by the number of angles for the interior angle.

$$\begin{aligned} Sum\ of\ Interior\ Angles &= (n-2) \times 180^o \\ &= (5-2) \times 180^o \\ &= 3 \times 180^O \\ &= 540^o \end{aligned}$$

$$\begin{aligned} Interior\ Angle &= \frac{Sum}{n} = \frac{(n-2) \times 180}{n} \\ &= \frac{(5-2) \times 180^o}{5} \\ &= \frac{3 \times 180^o}{5} \\ &= \frac{540^o}{5} \\ &= 108^O \end{aligned}$$

$Interior + Exterior = 180^o$



$All\ Exterior\ Angles\ sum\ to\ 360$

$72^o + 72^o + 72^o + 72^o + 72^o = 360^o$