Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

CC GEOMETRY TROICI

**MINI-LESSON #5: CIRCLES**



**TOPIC 1: AREA AND CIRCUMFERENCE OF A CIRCLE**

|  |  |
| --- | --- |
| **AREA (INSIDE)** | **CIRCUMFERENCE (OUTSIDE)** |
| $$A=πr^{2}$$Derived form: $Half Circumference ×Radius$ | $C=2πr$ OR $C=πd$ |

**TOPIC 2: ARC LENGTH**

$$\frac{Arc Length}{2πr}=\frac{Arc Measure}{360}$$

|  |  |
| --- | --- |
| **ARC MEASURE** | **ARC LENGTH** |
| The arc represented in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Compared to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | The arc represented in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Compared to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**TOPIC 3: SECTOR AREA**

$$\frac{Sector Area}{πr^{2}}=\frac{Arc Measure}{360}$$

|  |  |
| --- | --- |
| **AREA** | **SECTOR AREA** |
| The space inside the WHOLE circle | The space inside a section of the circle (PIZZA SLICE!)Compared to the total \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**TOPIC 4: ANGLE THEOREMS**

* A semi-circle equals \_\_\_\_\_\_\_\_\_\_\_ degrees.
* A radian is simply another way to express degrees of an angle. To convert from radians to degrees use the formula below (GIVEN TO YOU ON REGENTS)

$$Degree to Radian=Multiply by \frac{π}{180}$$

* If two angles intercept the **same arc** then those angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



|  |  |
| --- | --- |
| **INSCRIBED ANGLES** | **CENTRAL ANGLES** |
| **Image result for inscribed angle** | **Image result for central angle** |
| **TANGENT-RADIUS** | **TANGENT-CHORD** |
| **Image result for tangent radius angle** | **Image result for tangent chord angle** |
| **EXTERNAL ANGLE** | **CHORD CHORD ANGLE** |
| **Image result for external angle of circle** | **Image result for chord chord angle** |

**TOPIC 5: SEGMENTS THEOREMS**

|  |  |
| --- | --- |
|  **INTERSECTING CHORDS**  | **SECANT-SECANT FROM EXTERNAL POINT** |
|  |  |
| **TANGENT-SECANT** | **TANGENT-TANGENT** |
|  |  |

**TOPIC 6: EQUATIONS OF CIRCLES**

$$\left(x-h\right)^{2}+\left(y-k\right)^{2}=r^{2}$$

Where $(h,k)$ = Center

And $r$ = Radius

* Use completing the square to convert to the form above
	+ Example: $x^{2}+y^{2}-4x+8y+11=0$
* To determine if a point lies on the circle, substitute into the equation and see if it yields a true statement.