

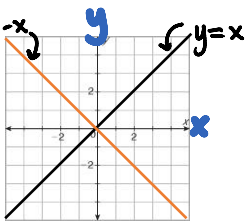
# GEOMETRY FINAL EXAM 2<sup>ND</sup> SEMESTER FORMULAS



## Chapter 7 (Similarity)

- Similar
  - Angles Congruent
  - Sides Proportional
- Proving Triangle Similarity
  - AA~
  - SAS~
  - SSS~

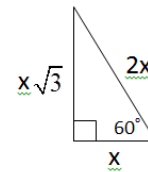
## Chapter 9 (Transformations)

- Sum of the Interior Angles =  $(n - 2) \times 180$
  - Each Interior Angle =  $\frac{(n - 2) \times 180}{n}$
  - Sum of the Exterior Angles = 360
  - Each Exterior Angle =  $\frac{360}{n}$
  - Name Polygons
    - Triangle (3)
    - Quadrilateral (4)
    - Pentagon (5)
    - Hexagon (6)
    - Heptagon (7)
    - Octagon (8)
    - Nonagon (9)
    - Decagon (10)
    - Dodecagon (12)
    - Pentadecagon (15)
  - Reflections
    - x-axis
    - y-axis
    - $y = x$
    - $y = -x$
- 
- Rotations
    - 90 degrees (CCW)
    - -90 degrees (CW)
    - 180 degrees (CCW)
    - -180 degrees (CW)
  - Translations
    - Vector <right(+)/left(-), up(+)/down(-)>
  - Composition of Transformations
    - Order does matter!

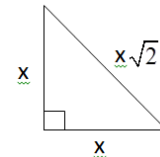
## Chapter 8 (Right Triangles)

- Pythagorean Theorem  $a^2 + b^2 = c^2$
- Classify Triangles
  - 1<sup>st</sup>: Triangle Test ( $a + b > c$ )
  - 2<sup>nd</sup>: Classify Triangle
    - $a^2 + b^2 > c^2$  (acute)
    - $a^2 + b^2 < c^2$  (obtuse)
    - $a^2 + b^2 = c^2$

- 30/60/90 Triangle



- 45/45/90 Triangle



- SOH-CAH-TOA
  - Looking for sides? Use proportion
  - Looking for an angle? Inverse

## Chapter 10 (Area)

- Triangle:  $\frac{b \times h}{2}$
- Equilateral Triangle:  $\frac{s^2 \sqrt{3}}{4}$
- Rectangle:  $bh$
- Parallelogram:  $bh$
- Rhombus:  $\frac{d_1 \times d_2}{2}$  or  $bh$
- Kite:  $\frac{d_1 \times d_2}{2}$
- Trapezoid:  $\frac{b_1 + b_2}{2} \times h$  or  $Mh$
- Area of Regular Polygon:  $\frac{1}{2} aP$
- Area of Circle:  $\pi r^2$
- Circumference of Circle:  $2\pi r$

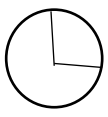
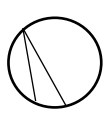
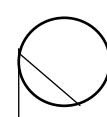
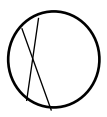
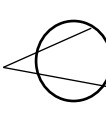
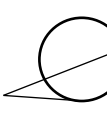
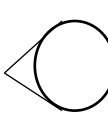
## Chapter 11: Surface Area and Volume

	Prism	Cylinder	Pyramid	Cone	Sphere
LSA	Ph	Ch	$\frac{1}{2}Pl$ (Reg. Only) l = slant height	$\frac{1}{2}Cl$	N/A
TSA	LSA + B + B B = area of base	LSA + B + B B = $\pi r^2$	LSA + B B = area of base	LSA + B B = $\pi r^2$	$4\pi r^2$
Volume	Bh B = area of base	Bh B = $\pi r^2$	$\frac{B \cdot h}{3}$ B = area of base	$\frac{B \cdot h}{3}$ B = $\pi r^2$	$\frac{4\pi r^3}{3}$

## Chapter 12: Circles

Area of Sector:  $\pi r^2 \times \frac{m}{360}$

Arc Length:  $2\pi r \times \frac{m}{360}$

Name	Central Angle	Inscribed Angle	Inscribed Angle	Chord-Chord Angle	Secant-Secant Angle	Tangent-Secant Angle	Tangent-Tangent Angle
Where is the vertex located?	Center	On	On	In	Out	Out	Out
How is it formed?	2 Radii	Chord-Chord	Chord-Tangent	Chord-Chord	Secant-Secant	Tangent-Secant	Tangent-Tangent
Picture							
Formula	Angle = Arc	Angle = $\frac{1}{2}\text{arc}$	Angle = $\frac{1}{2}\text{arc}$	Angle = $\frac{\text{arc} + \text{arc}}{2}$	Angle = $\frac{\text{arc} - \text{arc}}{2}$	Angle = $\frac{\text{arc} - \text{arc}}{2}$	Angle = $\frac{\text{arc} - \text{arc}}{2}$

Equation of a Circle:  $(x - h)^2 + (y - k)^2 = r^2$

