

**Geometry ABC Cheat Sheet**

<p><b>3-D Figures</b></p> <p>Prism: <math>V = Bh</math></p> <p>Pyramid: <math>V = \frac{1}{3}Bh</math></p> <p>Cylinder: <math>V = \pi r^2 h</math>; <math>SA = 2\pi r + 2\pi r^2</math></p> <p>Cone: <math>V = \frac{1}{3}\pi r^2 h</math>; <math>SA = \pi r^2 + \pi r l</math></p> <p>Sphere: <math>V = \frac{4}{3}\pi r^3</math>; <math>SA = 4\pi r^2 + \pi d^2</math></p>	<p><b>Regular Solids</b></p> <p>Tetrahedron - 4 faces</p> <p>Cube - 6 faces</p> <p>Octahedron - 8 faces</p> <p><b>Congruent Triangles</b></p> <p>SSS</p> <p>SAS</p> <p>ASA</p> <p>AAS</p> <p>HL</p> <p>(HL is <i>not</i> always correct)</p>	<p><b>Trig Ratios</b></p> <p><math>\sin = \frac{O}{H}</math></p> <p><math>\cos = \frac{A}{H}</math></p> <p><math>\tan = \frac{O}{A}</math></p> <p><math>\csc = \frac{H}{O}</math></p> <p><math>\sec = \frac{H}{A}</math></p> <p><b>SOH C A H TOA</b></p>	<p><b>Probability</b></p> <p><math>\frac{F}{O} = \frac{F'}{O'}</math></p> <p><b>Statistics</b></p> <p><math>\bar{x} = \frac{\sum x}{n}</math></p> <p><math>s^2 = \frac{\sum (x - \bar{x})^2}{n - 1}</math></p> <p><math>s = \sqrt{s^2}</math></p>
<p><b>Polygon Interior/Exterior Angles</b></p> <p>Sum of int. angles = <math>(n-2)180</math></p> <p>Each int. angle measure = <math>\frac{(n-2)180}{n}</math></p> <p>Sum of ext. angles = <math>360</math></p> <p>Each ext. angle measure = <math>\frac{360}{n}</math></p>	<p><b>Triangles</b></p> <p><b>By Sides:</b></p> <p>Scalene - no congruent sides</p> <p>Isosceles - 2 congruent sides</p> <p>Equilateral - 3 congruent sides</p> <p><b>By Angles:</b></p> <p>Acute - all acute angles</p> <p>Right - one right angle</p> <p>Obtuse - one obtuse angle</p> <p>Equiangular - 3 congruent angles(60°)</p> <p>Equilateral <math>\leftrightarrow</math> Equiangular</p> <p>The sum angle of a triangle equals the sum of the 2 non-adjacent interior angles</p> <p>Midsegment of a triangle is parallel to the third side and half the length of the third side.</p> <p><b>Isosceles: base angles are equal!</b></p>	<p><b>Similar Right Triangles</b></p>	<p><b>Properties:</b></p> <p>sum of any two sides of a triangle is greater than the third side</p> <p>longest side is opposite the largest angle</p> <p>smallest angle is the sum of the two smallest interior angles of a triangle</p>
<p><b>Related Conditions</b></p> <p>Converse: switch if and then</p> <p>Inverse: negate if and then</p> <p>Contrapositive: inverse of the converse (contrapositive has the same truth value as the original statement)</p>			
<p><b>Pythagorean Theorem</b></p> <p><math>a^2 + b^2 = c^2</math></p> <p>Converse: If the sides of a triangle satisfy <math>a^2 + b^2 = c^2</math> then the triangle is a right triangle</p>			