Trigonometry

**Formula Sheet**

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| **Name** | **Definition** | **Formula** |
| Equation of a Circle | The equation of a circle describes all the points that form the circle on a plane. | Where is the center and the radius is . |
| Unit Circle Equation | A circle centered at the origin (0,0) with a radius of 1. |  |
| 45-45-90 Special Right Triangle | A 45-45-90 special right triangle is made up of two angles, making it an isosceles triangle that form special side relationships. |  |
| 30-60-90 Special Right Triangle | A 30-60-90 special right triangle has one 60° angle and one that is 30° angle that form special side relationships. |  |
| Sine Function | The sine of an angle is equal to the length of the side that is opposite angle divided by the length of the hypotenuse. |  |
| Cosine Function | The cosine of an angle is equal to the length of the side adjacent to the angle divided by the length of the hypotenuse. |  |
| Tangent Function | Tangent is the ratio of the sine and cosine functions. |  |
| Trigonometric Functions on the Unit Circle | On the unit circle, when angle is formed by drawing a ray from the origin to the circle, they intersect at point . |  |
| Radians and Degrees | A radian is another unit of measurement for angles, the other measurement being degrees. Using conversion factors, you can convert between the two measurements. | Degrees to Radians Conversion Factor:  Radians to Degrees Conversion Factor: |
| Unit Circle | In trigonometry, the unit circle has a radius of 1 and is centered at the origin. It is used to find the values for sine and cosine of common angles.  The coordinates of each point are written . |  |
| Signs of Trigonometric Functions | The signs of trigonometric functions are dependent on which quadrant the angle is in on the coordinate plane/unit circle. |  |
| Pythagorean Identity | The *Pythagorean Identity* is another way of expressing the equation of the unit circle in terms of the angle . It can be used to find the sine, cosine, and tangent of an angle. The identity can be rearranged to isolate a specific function. | The identity can be rearranged to identify a specific function: |