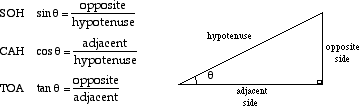
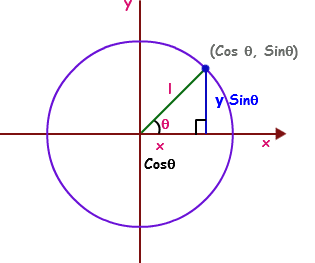
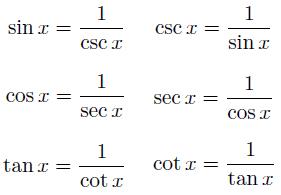
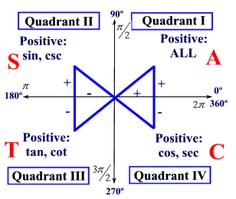
**STUDY SHEET: UNIT 6- TRIGONOMETRY**

**TOPIC 1: BASIC TRIG**

* + **PYTHAGOREAN THEOREM:** 
    - TRIPPLES:
    - 3,4,5
    - 5,12,13
    - 8,15,17 and any multiple of these triples. Ex: 6-8-10
    - 7,24,25
  + **SOHCAHTOA**
    - DEGREE MODE!!!!!
    - To find angles, you must use **2nd**

[](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwjl7ZuBguHQAhXC5iYKHUOwB2gQjRwIBw&url=http://www.mathwords.com/s/sohcahtoa.htm&bvm=bv.140496471,d.ZGg&psig=AFQjCNEkABJeWD-TsQmnK0W0NfvVmjXBnw&ust=1481163457402736)

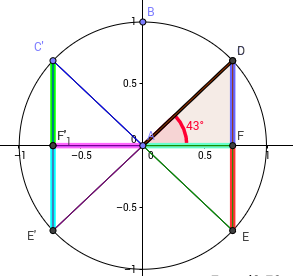
**[](http://math.tutorcircle.com/trigonometry/unit-circle.html)**

* + **THE UNIT CIRCLE** 
    - Radius = 1; Center = (0, 0)
    - If the circle is in **standard form** the *initial ray* will lie on the x-axis and the *terminal side* will rotate however many degrees counter clockwise A line from the terminal ray should be drawn to the x-axis so we have a right triangle
    - Using the diagram to the right we know that …
      * + Sin Ɵ = y
        + [](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwiVmO648-rQAhUF5yYKHXPNADgQjRwIBw&url=http://calculustricks.com/lessons/trig-identities/&bvm=bv.140496471,bs.1,d.ZGg&psig=AFQjCNEwCxOGO3nljOAOrRGQgcF115d6_A&ust=1481503063865064)Cos Ɵ = x
        + Therefore, (x,y)= (cos Ɵ, sin Ɵ)
        + Tan Ɵ = or
* **RECIPROCAL TRIG FUNCTIONS**
  + **S**ecant is reciprocal to **C**osine
  + **C**osecant is reciprocal to **S**ine
  + Cotangent is reciprocal to tangent
    - Cotangent can also be expressed as
  + [](https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwiVp7q99OrQAhXHQiYKHd9_D1cQjRwIBw&url=https://www.pinterest.com/pin/554857616563841748/&bvm=bv.140496471,bs.1,d.ZGg&psig=AFQjCNEH-Tr8ydL42aYG3btdWYZIQUxTpg&ust=1481503418463002)When given the one of the trig functions, you simply have to

flip the fraction in order to find its reciprocal

* **ASTC**
  + Tells you where each trig function is **POSITIVE!**
  + If a trig function is not positive in a quadrant, that means it is **NEGATIVE**!

All Star Trig Class

* **BOWTIE PROBLEMS**
  + STEPS:

1. Use ASTC to determine what quadrant you are in
2. Draw appropriate triangle
3. Label sides of triangle according to SOHCAHTOA
4. Use Pythagorean theorem to find missing side
5. Solve for desired trig function

* **TRIGONOMETRIC IDENTITES**

|  |  |  |
| --- | --- | --- |
| **QUOTIENT IDENTIES** | **RECIPROCAL IDENTITES** | **PYTHAGOREAN IDENTITES** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

* **RADIANS**
  + Radian: the measure of a central angle that intercepts an arc that is equal in length to the radius of a circle
    - 1 radian= about 57o
    - 360 degrees= about 6.28 radians= 2π

To convert radians to degrees you multiply by

To convert degrees to radians you multiply by

**(DR POT!)**