**The Three Graphs: y=sinx0, y=cosx0 and y=tanx0**



The table tells us when the graphs are **positive**

**(**above the x-axis) or **negative** (below the x-axis) in value.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Quadrant** | **Angle** | **y=sinx0** | **y=cosx0** | **y=tanx0** |
| 1 | 0 – 90 0 |  |  |  |
| 2 | 90 - 1800 |  |  |  |
| 3 | 180 - 2700 |  |  |  |
| 4 | 270 -3600 |  |  |  |

This diagram tells us where the graphs are **positive** in value.

900

|  |  |
| --- | --- |
| 1800 | 00 |
| 2700 |  |

**Solving Trigonometric Equations Graphically**

1. Solve sin x0=0.5

acute angle = sin-1 (0.5)

=

Quadrant

Quadrant

1. Solve cos x0=0.5

 acute angle = cos-1 (0.5)

=

Quadrant

Quadrant

1. Solve tan x0 = 1



acute angle = tan-1 (1)

Quadrant

Quadrant

**Solving Trigonometric Equations Using ASTC**

This diagram tells us where how to work out related angles in each of the 4 quadrants.

900

|  |  |
| --- | --- |
| Q2 : x = 180 - a  1800 | Q1 Acute angle = a  00 |
| Q3 : x = 180 + a  2700 | Q4 : x = 360 - a |

Examples

1) Solve sin x0=0.5