

Trigonometric Equations

#1 $3m + 7 = 5$

$\frac{3m}{3} = \frac{-2}{3} \quad m = -\frac{2}{3}$

#2 $5^{3m} + 2 = 3^{3m} + 5$

$2m + 2^2 = 5^2$

$\frac{2m}{2} = \frac{3}{2} \quad m = \frac{3}{2}$

$4m^2 + 1 = 3$

$\frac{4m^2}{4} = \frac{2}{4}$

$\sqrt{m^2} = \sqrt{\frac{1}{2}}$

$m = \pm \sqrt{\frac{1}{2}}$

$m = \pm .707$

$m^2 = 9$

$m = 3 \text{ or } -3$

#4 $m^2 - 6m - 27 = 0$

$(m + 3)(m - 9) = 0$

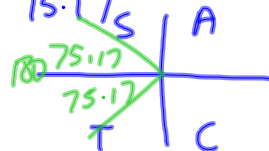
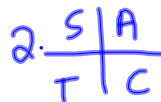
$m = -3 \text{ or } +9$

$\cos \theta = -.256$

Find both values of θ

1. Ref θ by $\cos^{-1}(.256)$ ignore negative

ref $\theta = 75.17$



$\theta = 104.83$

$\theta = 255.17$

Assignment #2 Solve for θ

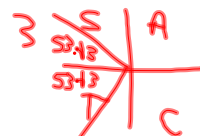
$5 \cos \theta + 4 = 1$

1. Solve for $\cos \theta$

$\frac{5 \cos \theta}{5} = \frac{-3}{5}$

$\cos \theta = -\frac{3}{5}$

2. Ref θ and $\cos^{-1}(\frac{3}{5}) = 53.13$



$\theta = 126.87$

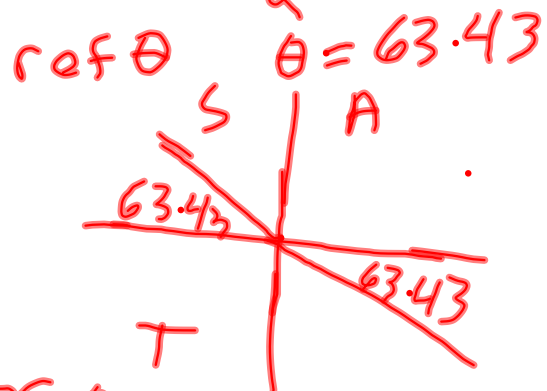
$\theta = 233.13$

$$\#2 \quad \tan^2 \theta - 3 \tan \theta - 10 = 0$$

think $x^2 - 3x - 10 = 0$

$$(\tan \theta - 5)(\tan \theta + 2) = 0$$

$$\tan \theta = +5 \quad \text{or} \quad \tan \theta = -2$$



$$\theta = 78.69$$

$$180^\circ \theta = 258.69$$

$$180^\circ \theta = 116.57$$

$$360^\circ \theta = 296.57$$