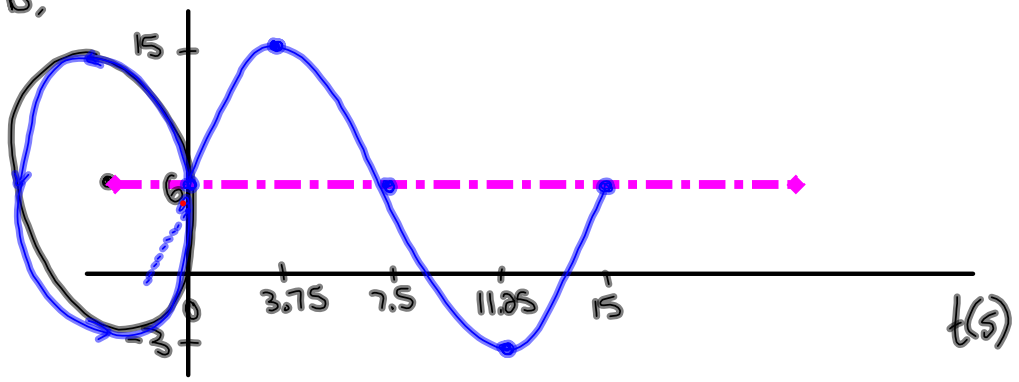
Questions from Homework

② $A = 9$ $\quad min = -3$ $\quad C = 0$

$P = 15s$ $\quad max = 15$ $\quad +\sin$ graph

$K = \frac{360}{15} = 24$ $\quad D = 6$ $\quad y = 9\sin[24(x)] + 6$

b; h(m)



c) $y = 9\sin[24(6)] + 6$

$y = 11.3m$

d) $0 = 9\sin[24x] + 6$

$-6 = 9\sin(24x)$

$-0.\bar{6} = \sin(24x)$

$-41.8 = 24x$

$-1.74s = x$ $\quad \rightarrow x = 13.26s$

③a) $max = 5$

$min = 1$

$D = 3$

$A = 2$

$P = 360$

$K = 1$

$+\sin\ (C = -90)$

$y = 2\sin[1(x+90)] + 3$

$+\cos\ (C = 0)$

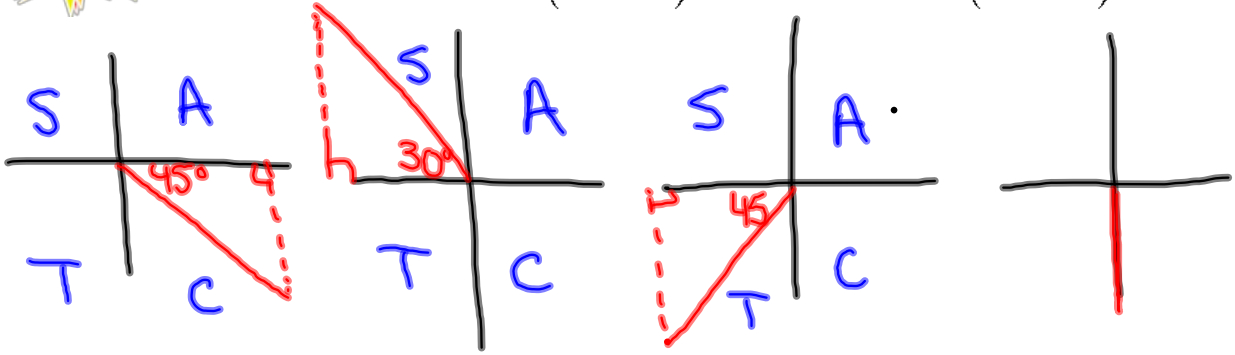
$y = 2\cos[1(x)] + 3$

And now for the grand finale...if you can handle this one, you should give yourself a nice pat on the back.

Without a calculator determine the value of ...

P.A. 150° P.A. 225° P.A. 270°

$$\sec^2 315° - \sin(-210°) + 2\cot^2 585° \sin(-450°)$$



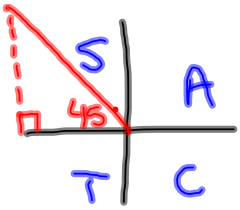
$$(+\sqrt{2})^2 - (+\frac{1}{2}) + 2(+1)^2(-1)$$

$$2 - \frac{1}{2} - 2$$

$$\boxed{-\frac{1}{2}}$$

Without a calculator determine the value of...

$$\frac{2\cos 180 + \sin 135}{\cos^2(-330)}$$



P.A. 30°

$$\frac{2(-1) + \left(+\frac{\sqrt{2}}{2}\right)}{\left(+\frac{\sqrt{3}}{2}\right)^2}$$

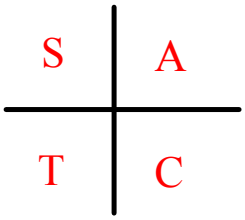
$$\frac{-\frac{2}{1} + \frac{\sqrt{2}}{2}}{\frac{3}{4}}$$

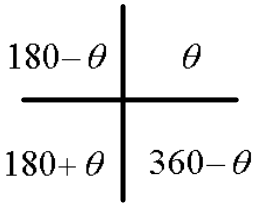
$$\frac{-\frac{4}{2} + \frac{\sqrt{2}}{2}}{\frac{3}{4}}$$

$$\frac{-4+\sqrt{2}}{2} \cdot \frac{4}{3}$$

$$\boxed{\frac{-8+2\sqrt{2}}{3}}$$

Solving Trigonometric Equations





1. Find θ by looking at charts (triangles)

2. If it is positive θ = angle

3. Find where else that trig ratio is (+) or (-)

4. Use CAST and appropriate equation.

S	A
T	C

$180-\theta$	θ
$180+\theta$	$360-\theta$

Write all angles between 0 and 360 that will solve the following

$$\cos\theta = \frac{\sqrt{3}}{2}$$ ref = 30°

$\theta = 30°$, $360° - 30° = 330°$

Solving Trigonometric Equations

$$\cos^2\theta - \frac{1}{2}\cos\theta = 0, \quad -360° \le \theta \le 720°$$

$\cos\theta\left(\cos\theta - \frac{1}{2}\right) = 0$

$\cos\theta = 0$ | $\cos\theta - \frac{1}{2} = 0$

$\theta = 90°, 270°$

$\theta = -270°, -90°$

$\theta = 450°, 630°$

$\cos\theta = \frac{1}{2}$ ref = 60°

$\theta = 60°, 300°$

$\theta = -300°, -60°$

$\theta = 420°, 660°$

Solving Trigonometric Equations

$2\sin^2\theta + \sin\theta - 1 = 0 \qquad 0 \le \theta \le 360$

$(2\sin^2\theta + 2\sin\theta)(-\sin\theta - 1) = 0$

$2\sin\theta(\sin\theta + 1) - 1(\sin\theta + 1) = 0$

$(2\sin\theta - 1)(\sin\theta + 1) = 0$

$2\sin\theta - 1 = 0$

$2\sin\theta = 1$

ref 30° $\sin\theta = \frac{1}{2}$

$\theta = 30^\circ, 150^\circ$

$\sin\theta + 1 = 0$

$\sin\theta = -1$

$\theta = 270^\circ$

Homework

S	A
T	C

⑤ a) $\sin\theta = -\frac{\sqrt{3}}{2}$ $\quad \text{ref}\,\theta = 60°$

Q3	Q4
$\theta = 180° + 60°$	$360° - 60°$
$= 240°$	$300°$
$240° + 360°k, k \in I$	$300° + 360°k, k \in I$