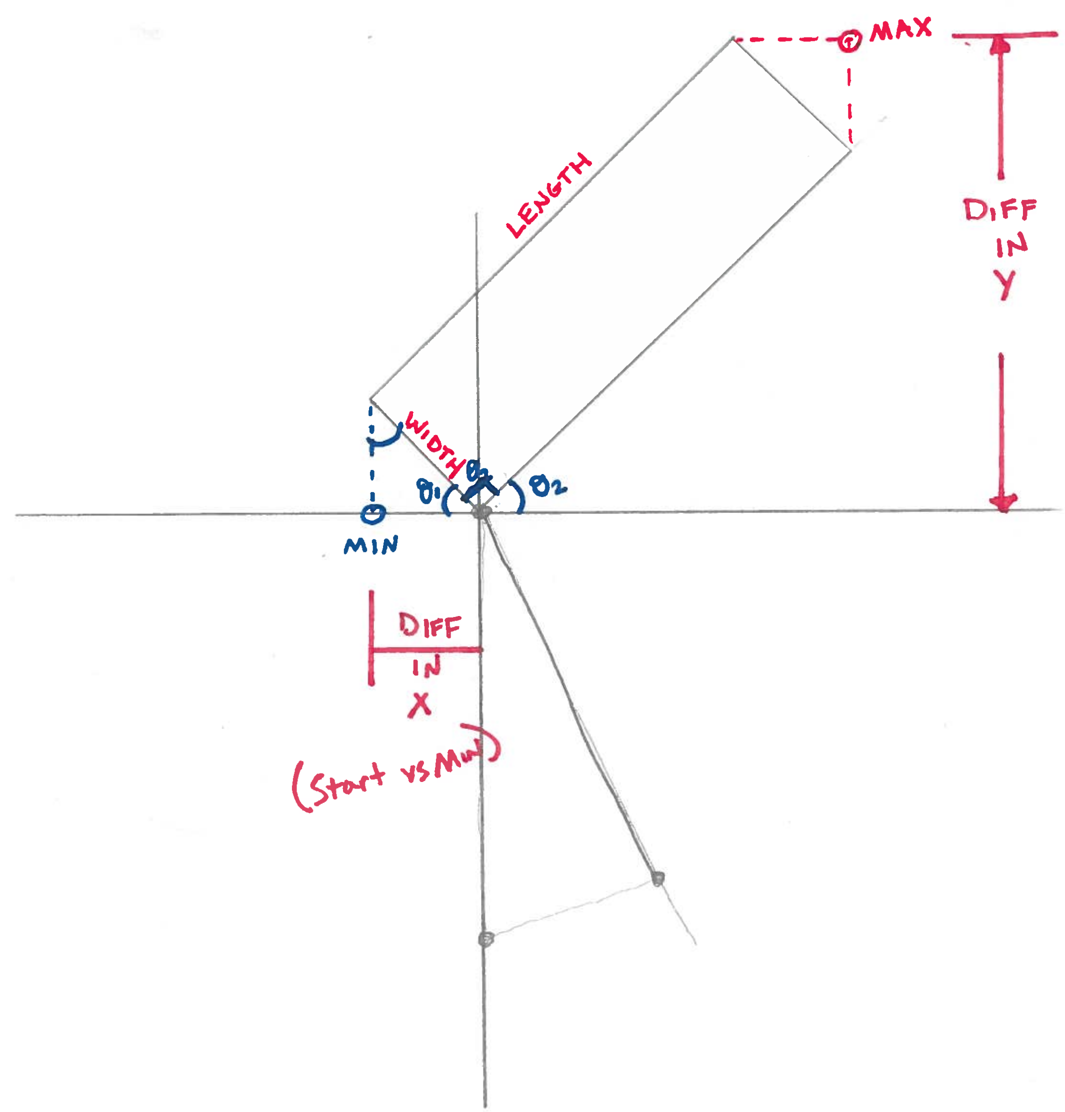
USING MODULE C1 (12'-5" x 32'-...

Q I

WIDTH 12.5
LENGTH 32.75
(MIN) DIFF IN X 8.84
(MAX) DIFF IN Y 32.0



$$\cos\theta_1 = \frac{\text{DIFF IN X}}{\text{WIDTH}} \quad \text{(MIN)}$$

$$\cos\theta_1 = \frac{8.84}{12.5}$$

$$\theta_1 = \cos^{-1}(0.7072)$$

$\theta_1 = 45$ ✓ CHECKED AGAINST MODEL

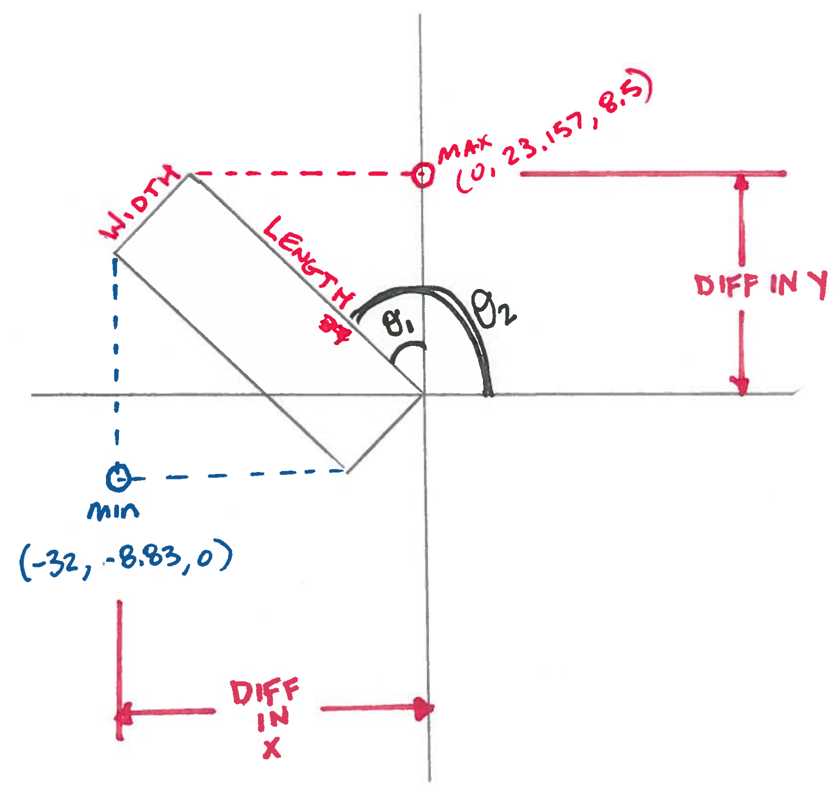
$\theta_2 = 90 - \theta_1$ (SINCE THE MODULE HAS A RIGHT ANGLE THAT DIVIDES THESE ANGLE THEY MUST BE THE SUM OF 90.)

$\theta_2 = 45$ ✓ CHECKED AGAINST MODEL

USING MODULE C1 (12'-5" x 32'-9")

WIDTH 12.5
LENGTH 32.75
(MIN) DIFF IN X 32.0
(MAX) DIFF IN Y 23.157

QII



$$\cos\theta_1 = \frac{\text{DIFF IN Y (MAX)}}{\text{LENGTH}}$$

$$\cos\theta_1 = \frac{23.157}{32.75}$$

$$\theta_1 = \cos^{-1}(0.707)$$

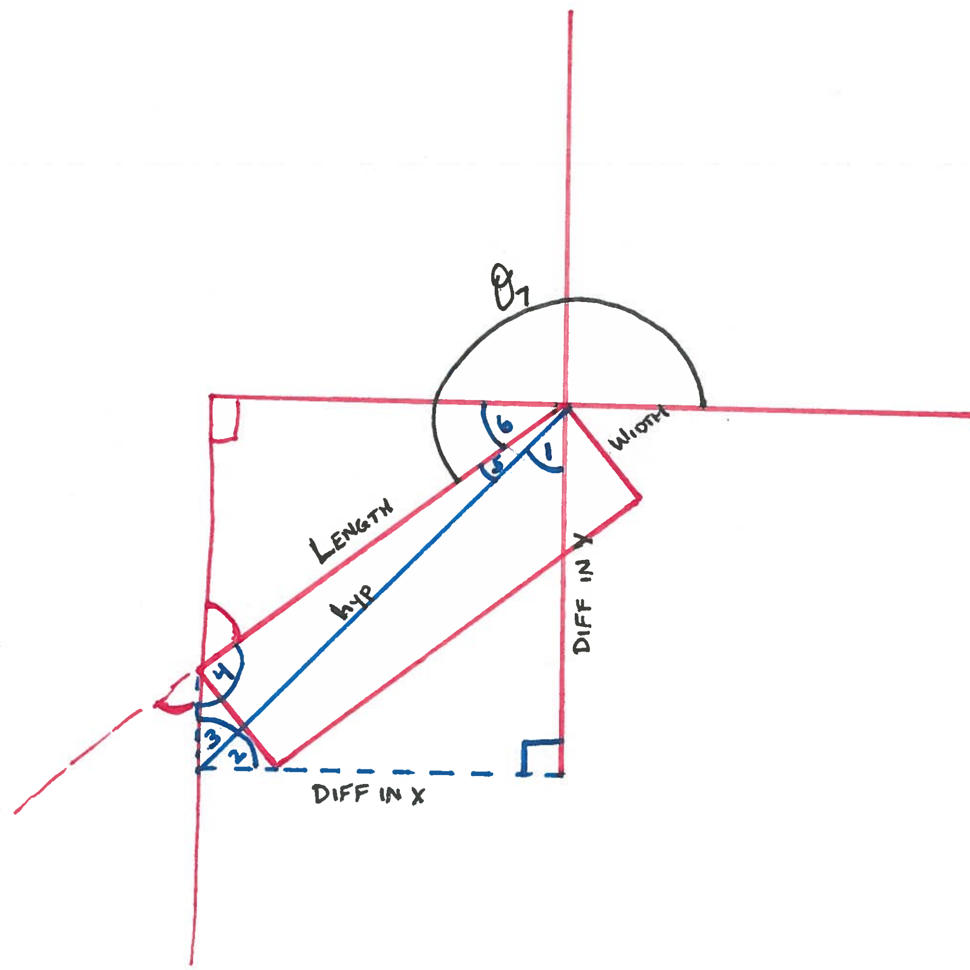
$\theta_1 = 45$ ✓ CHECKED AGAINST MODEL

$\theta_2 = 90 + 45$ ✓ CHECKED AGAINST MODEL

USING MODULE C1 (12'-5" x 32'-9")

QIII

WIDTH	12.5
LENGTH	32.75
(MIN) DIFF IN X	23.16
(MIN) DIFF IN Y	32.00



$\cos(\theta_1) = \frac{\text{DIFF IN Y}}{\text{hyp}}$

$\text{hyp} * \cos(\theta_1) = \text{DIFF IN Y}$

$\text{hyp} = \frac{\text{DIFF IN Y}}{\cos(\theta_1)}$

$\text{hyp} = \frac{32.00}{0.81}$

$\text{hyp} = 39.50$ ✓ CHECKED AGAINST MODEL

$\theta_1 = \tan^{-1}\left(\frac{\text{DIFF IN X}}{\text{DIFF IN Y}}\right)$ (MIN) (MIN)

$\theta_1 = \tan^{-1}\left(\frac{23.16}{32.00}\right)$

$\theta_1 = \tan^{-1}(0.72375)$

$\theta_1 = 35.895°$ ✓ CHECKED AGAINST MODEL

$\theta_2 = 90 - 35.895$

$\theta_2 = 54.105°$ ✓ CHECKED AGAINST MODEL

$\theta_5 = 180 - \theta_3 - \theta_{4\,\text{supplement}}$

$\theta_5 = 180 - 35.895 - 135.00$

$\theta_5 = 9.105$ ✓ CHECKED AGAINST MODEL

$\theta_3 = 90 - 54.105$

$\theta_3 = 35.895°$ ✓ CHECKED AGAINST MODEL

$\theta_6 = 90 - \theta_5 - \theta_1$

$\theta_6 = 90 - 9.105 - 35.895$

$\theta_6 = 45$ ✓ CHECKED AGAINST MODEL

$\frac{\text{LENGTH}}{\sin(\theta_3)} = \frac{\text{hyp}}{\sin(\theta_4)}$

$\sin(\theta_4) = \frac{\text{hyp} * \sin(\theta_3)}{\text{LENGTH}}$

$\theta_4 = \sin^{-1}\left(\frac{\text{hyp} * \sin(\theta_3)}{\text{LENGTH}}\right)$

$\theta_4 = \sin^{-1}\left(\frac{39.50 * 0.5863}{32.75}\right)$

$\theta_4 = \sin^{-1}(0.7071)$

$\theta_4 = 45.00$ ✗

135.00 = Supplement

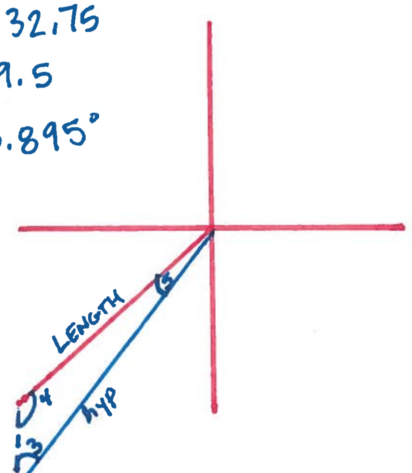
The sin of an obtuse angle is equal to that of its supplement →

Here we are getting the supplement

LENGTH = 32.75

hyp = 39.5

$\theta_3 = 35.895°$



$\theta_7 = 180 + \theta_6$

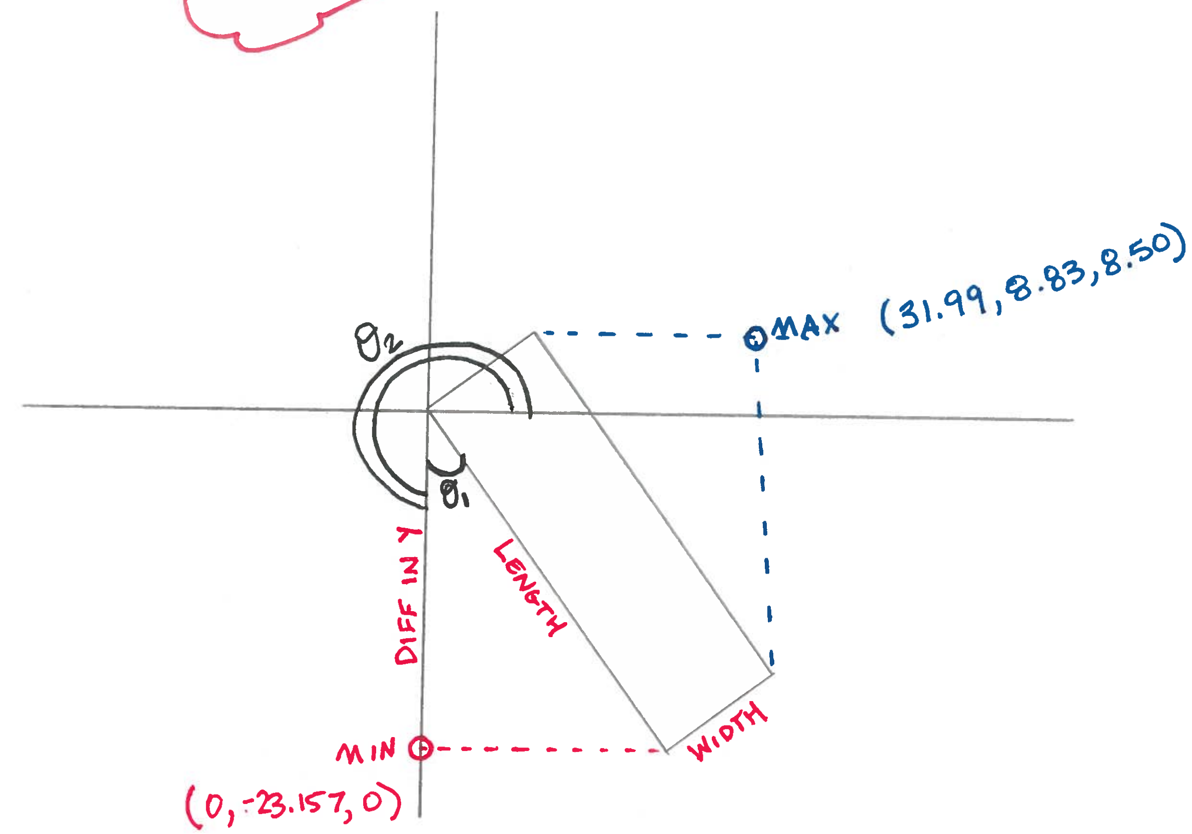
$\theta_7 = 180 + 45$

$\theta_7 = 225$ ✓ CHECKED AGAINST MODEL

USING MODULE C1 (12'-5" x 32'-9")

QIV

WIDTH	12.5
LENGTH	32.75
(MAX) DIFF IN X	32.00
(MIN) DIFF IN Y	23.16



$$\cos\theta_1 = \frac{\text{DIFF IN Y}}{\text{LENGTH}} \text{ (MIN)}$$

$$\cos\theta_1 = \frac{23.16}{32.75}$$

$\cos\theta_1 = 0.7017$

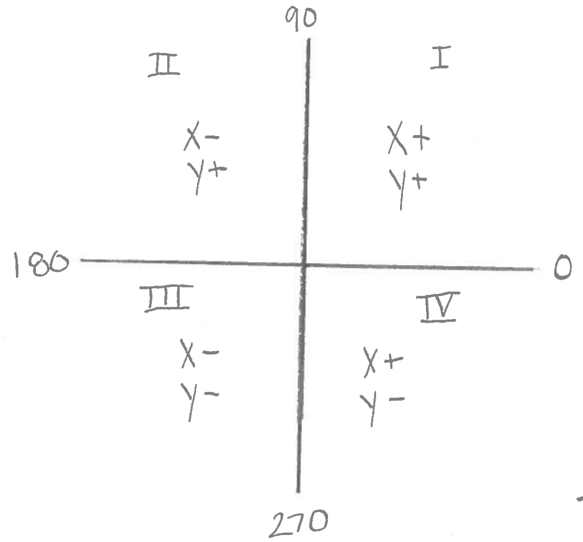
$\theta_1 = \cos^{-1}(0.7017)$

$\theta_1 = 45.00$ ✓ CHECKED AGAINST MODEL

$\theta_2 = 270 + \theta_1$

$\theta_2 = 270 + 45$

$\theta_2 = 315$ ✓ CHECKED AGAINST MODEL



II

Limit $x \to -\infty$

MAX $X \leq 0$
MIN $X \leq 0$

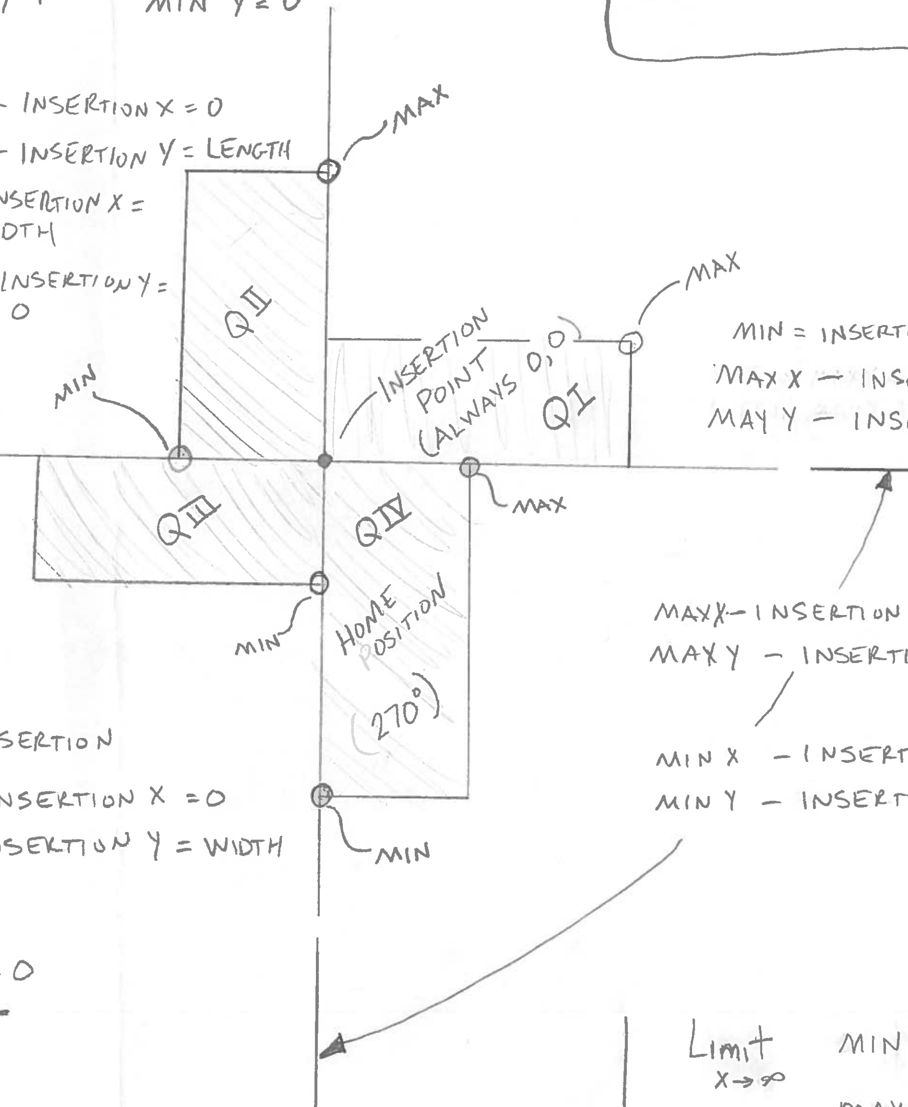
MAX $X = 0$
LENGTH $\geq$ MAX $Y \geq 0$

$-(\text{WIDTH}) \geq$ MIN $X \leq 0$
$-(\text{WIDTH}) \geq$ MIN $Y \leq 0$

MAX $X = 0$
MAX $Y +$

MIN $X -$
MIN $Y = 0$

MAX X - INSERTION X = 0
MAX Y - INSERTION Y = LENGTH
MIN X - INSERTION X = WIDTH
MIN Y - INSERTION Y = 0



I

Limit $x \to 0$ — MAX $X \geq 0$ → Length $\leq$ MAX $X > 0$
MIN $X = 0$ → Length $<$ MAX $Y >$ WIDTH

MAX X +
MAX Y +

$-(\text{WIDTH}) \geq$ MIN $X \leq 0$
MIN $Y = 0$

MIN = INSERTION
MAX X − INSERTION X = LENGTH
MAY Y − INSERTION Y = WIDTH

III

Limit $x \to 0$

MIN $X = 0$
$-(\text{WIDTH}) \leq$ MIN $Y \leq -(\text{LENGTH})$

WIDTH $\leq$ MAX $X \geq 0$
MAX $Y = 0$

MAX = INSERTION
MIN X - INSERTION X = 0
MIN Y - INSERTION Y = WIDTH

MIN $X = 0$
MIN $Y -$

MAX X - INSERTION X = WIDTH
MAX Y − INSERTION Y = 0

MAX X +
MAX $Y = 0$

MIN X − INSERTION X = 0
MIN Y − INSERTION Y = LENGTH

IV

Limit $x \to \infty$

MIN $X \leq 0$
MAX $X \geq 0$

MIN $X = 0$
$-(\text{LENGTH}) \geq$ MIN $Y < 0$
LENGTH $\leq$ MAX $X > 0$
WIDTH $<$ MAX $Y \geq 0$