

$$\text{GRAPHING } y = a \sin(x-c) + d \quad / \quad y = a \cos(x-c) + d$$

$$y = a \sin(x-c) + d \quad \leftarrow \text{TRANSFORM UP OR$$

DOWN

VERTICAL EXPANSION/COMPRESSION

- MULTIPLY THE y -VALUES MOVE LEFT/RIGHT
- BY THE NUMBER * THINK BACKWARDS *

- IF $a > 1$ VERTICAL EXPANSION

$0 < a < 1$ VERTICAL COMPRESSION

$a < 0$ REFLECTION IN x -AXIS

- a IS THE AMPLITUDE, $|a|$ REPRESENTS THE DISTANCE FROM THE MAXIMUM OR MINIMUM

POINT TO THE X-AXIS.

$$\text{USE } \Rightarrow a = \frac{M - m}{2}, \text{ WHERE } M = \text{MAX}$$

$$m = \text{MIN}$$

DE GRAPH $y = 2 \sin \left(x - \frac{\pi}{6} \right) + 1$

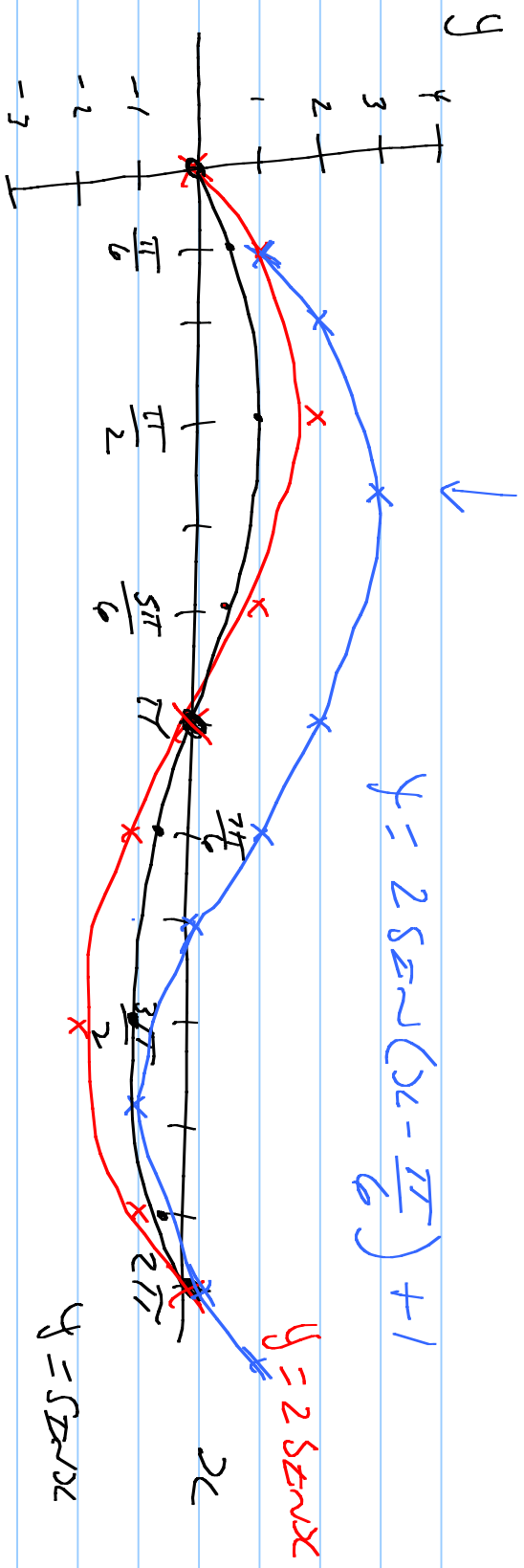
DETERMINE : DOMAIN : \mathbb{R}

$$\text{RANGE : } -1 \leq y \leq 3$$

PHASE SHIFT : $\frac{\pi}{6}$ TO THE RIGHT

AMPLITUDE : 2

MAX/MIN VALUES : 3 AND -1



A S S C
 I I I I
 A S T C

H/W

R₆ L&R # 3A-15, 4G-4, 6

209 # 1, 2A, 3, 8-10