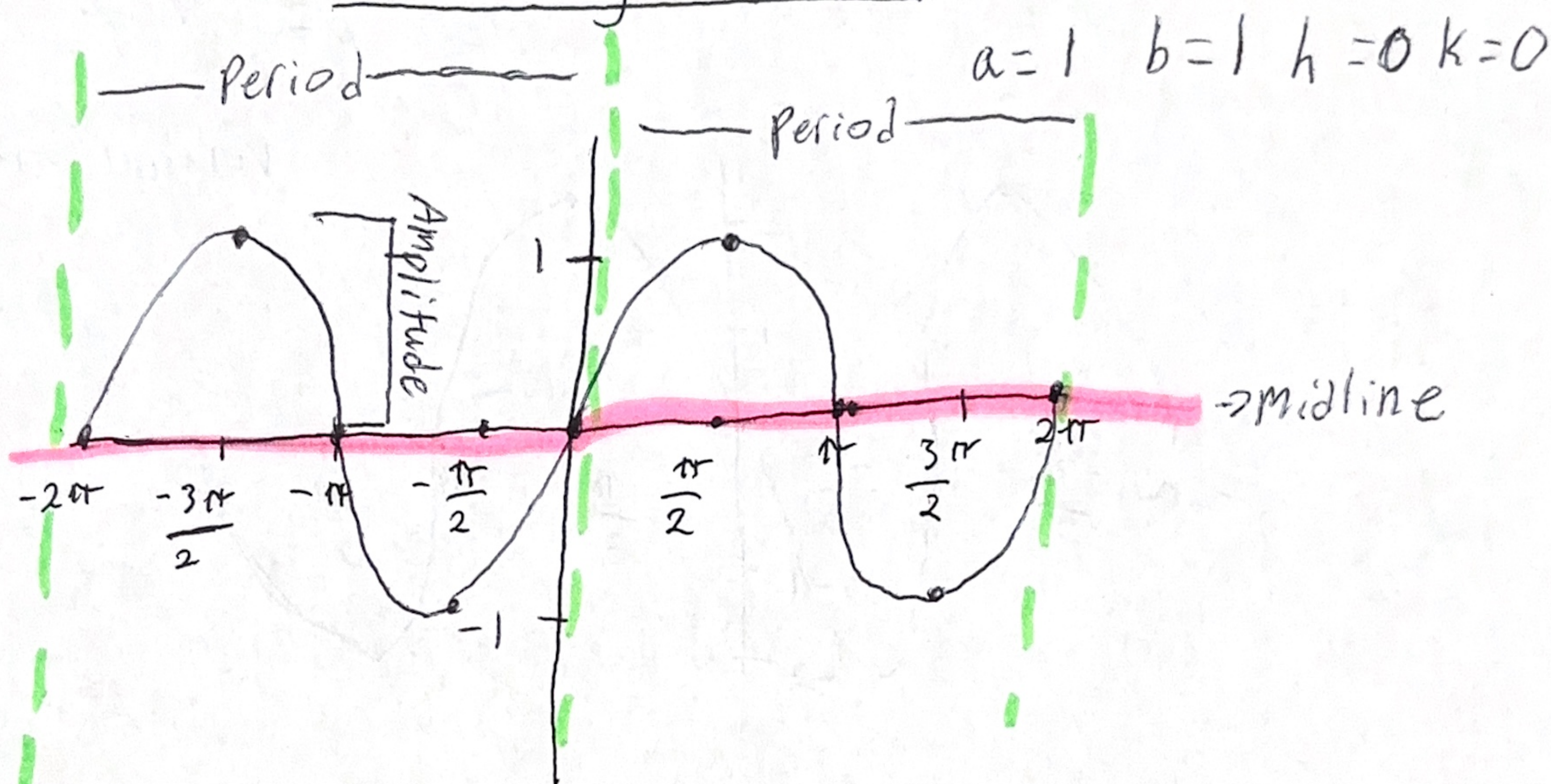


Graphing $y = \sin x$



mid, high, mid, low, mid

$$y = a \sin(x + h) + k$$

A = Amplitude of the graph (vertical stretch or compression)

- $A \neq 0$; so when it is not present in formula $A=1$

- **A can not be negative!**

B = will go into b later in the unit. B shifts the period of the graph. (Horizontal stretch or compression)

- $B \neq 0$, so when it is not present $B=1$

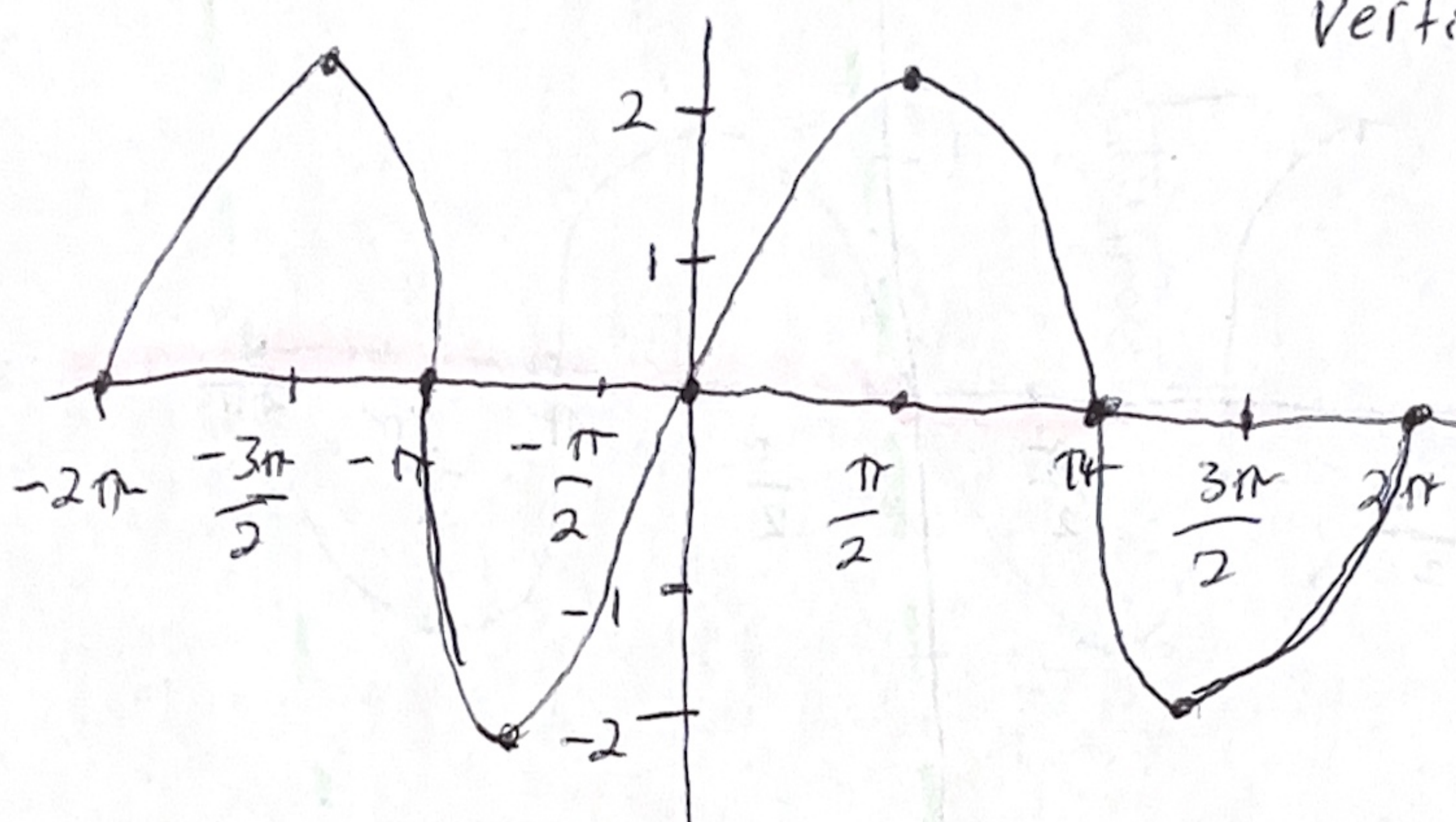
H = Shifts graph horizontally left or right. Sign in equation is the opposite when taken out of formula (Positive - left, Negative - right) (x -axis)

K = Shift the graph vertically up or down. (y -axis)

$$y = 2 \sin x$$

$$A=2 \quad b=1 \quad h=0 \quad k=0$$

Vertical stretch



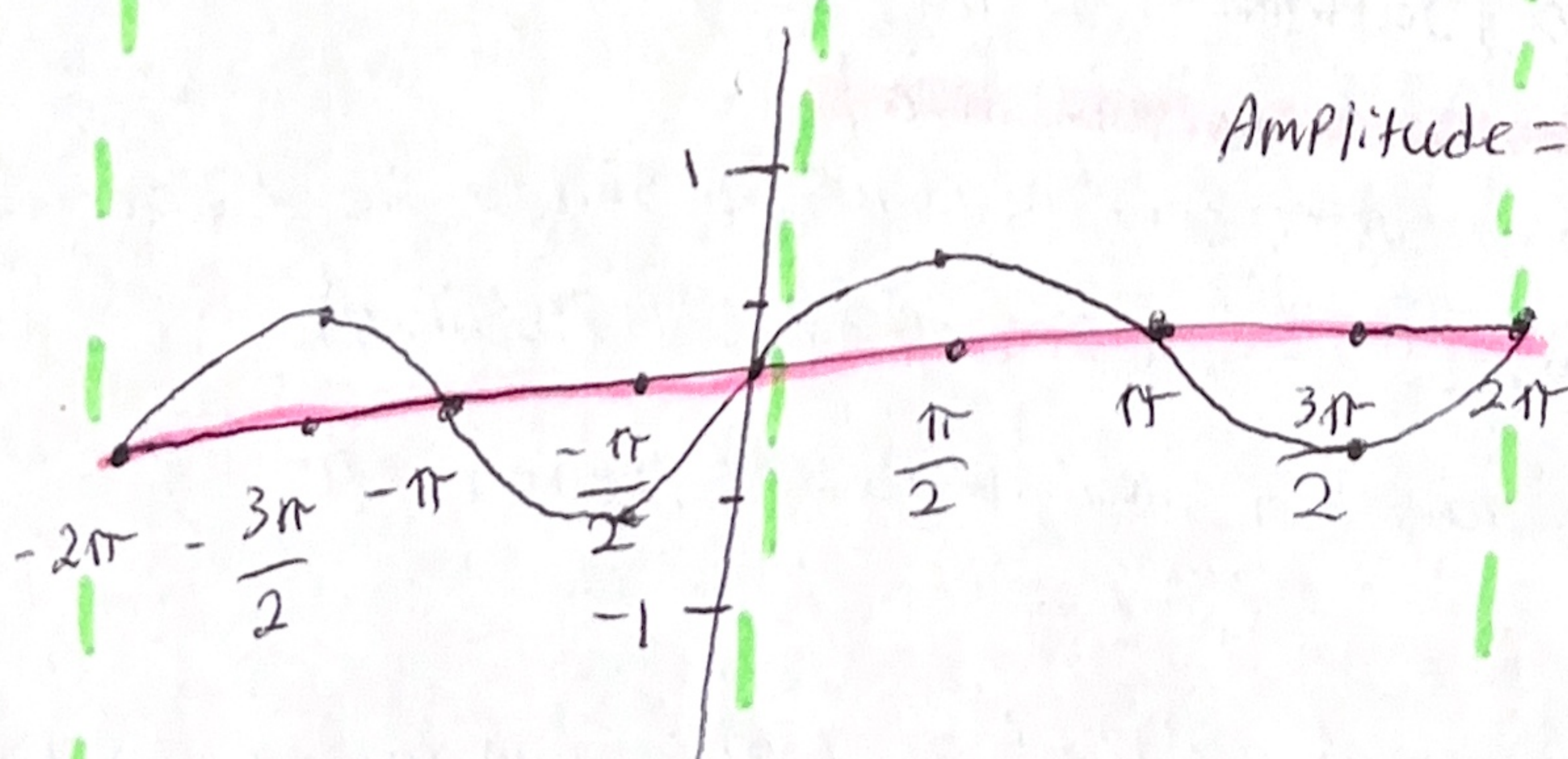
$$y = \frac{1}{2} \sin x$$

$$a = \frac{1}{2} \quad b=1 \quad h=0 \quad k=0$$

Vertical compression

$$\text{Amplitude} = \frac{1}{2} \quad \text{Period} = 2\pi$$

midline = 0

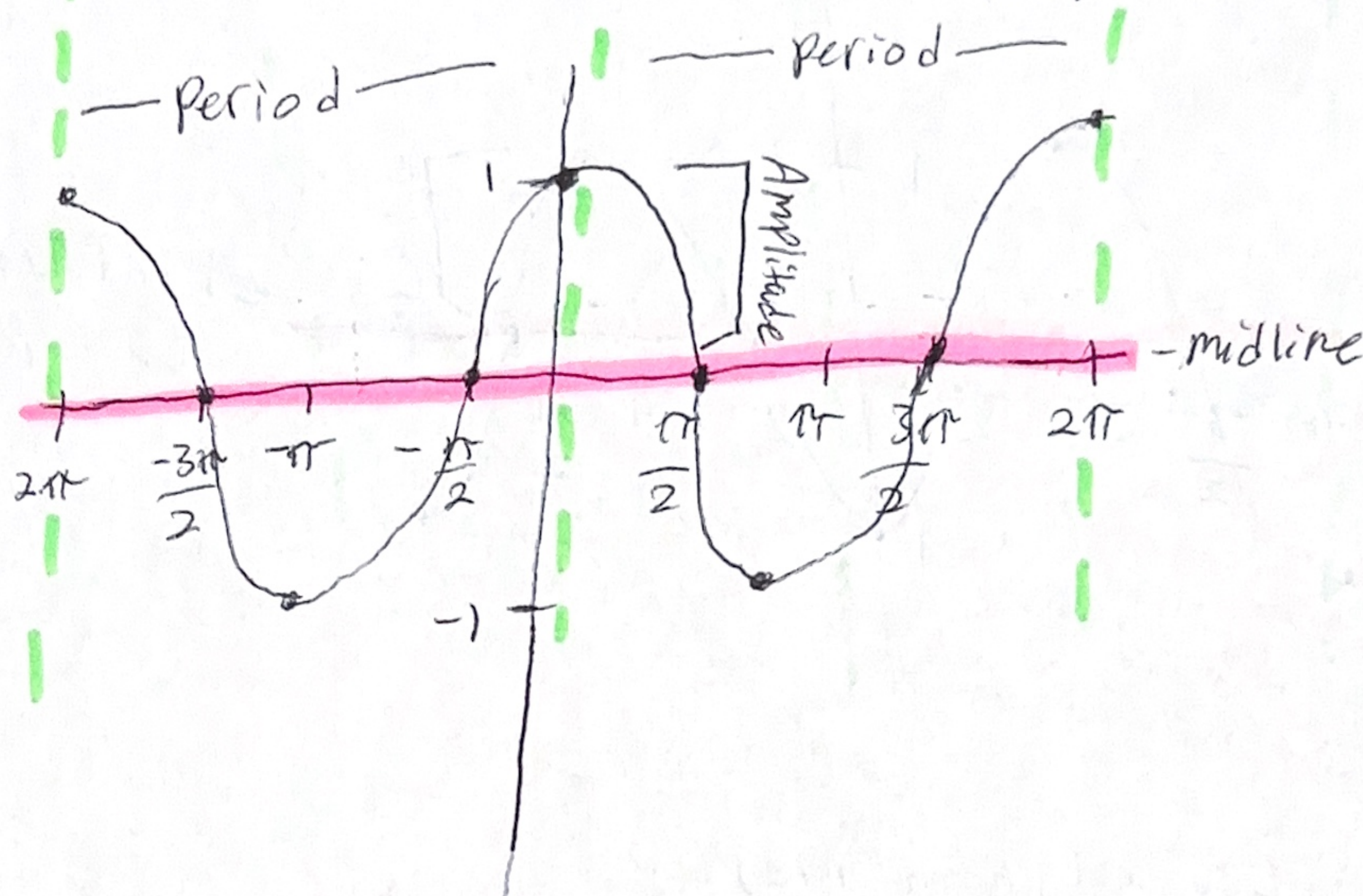


Graphing $y = \cos x$

$$y = A \cos B(x + h) + k$$

$$A = 1 \quad B = 1(2\pi) \quad h = 0$$

$$k = 0$$



High, mid, Low, mid, High

A = Represents the amplitude, vertical stretch or compression

- $A \neq 0$, so A will = 1 when not in formula

- A can never be negative

B = The period of the graph, horizontal stretch or compression

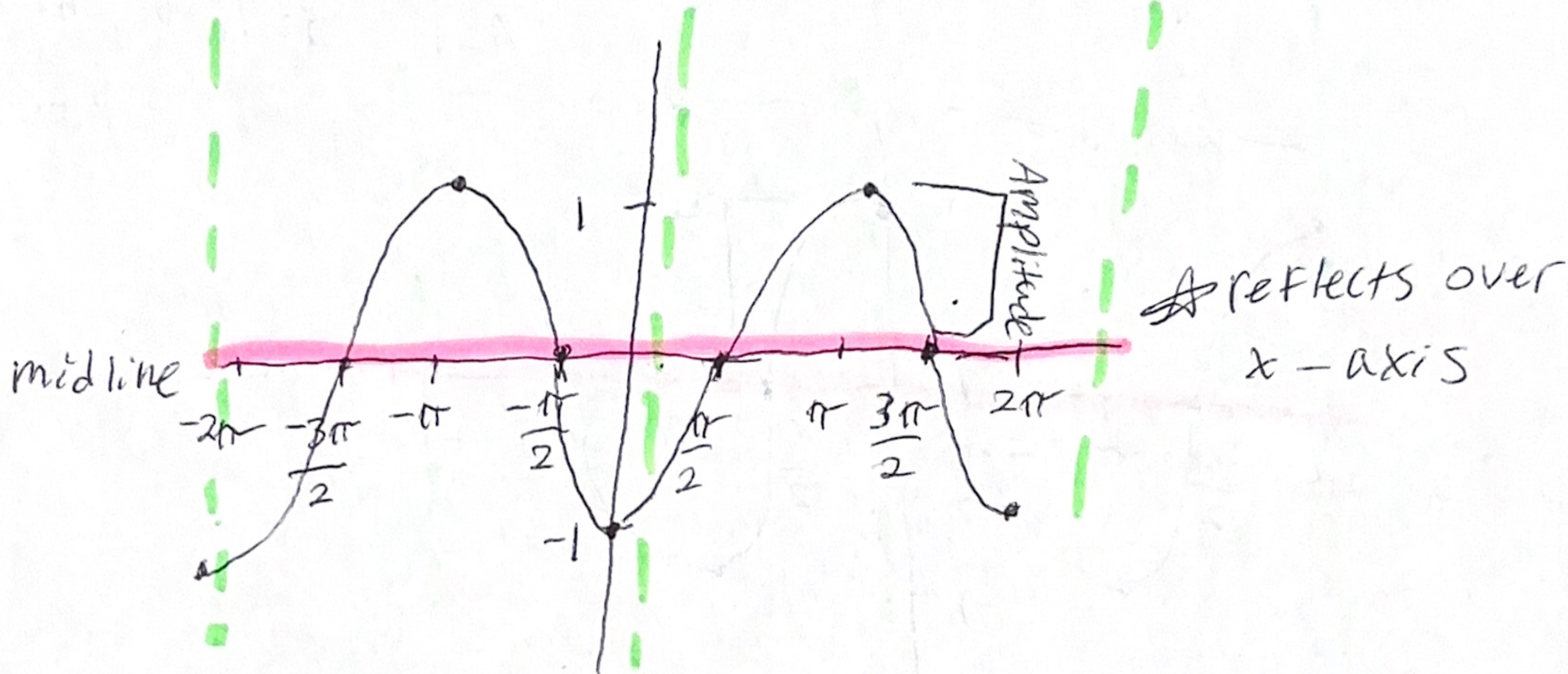
$B \neq 0$, so B will = 1 when not in formula

H = Shifts graph left or right. Sign will be the opposite when taken out of formula (Positive - left shift, Negative - right shift)
(~~on~~ x-axis)

K = Shifts graph up or down. (y-axis)

$$y = -\cos x$$

$$A = +1 \quad B = 1 \quad h = 0 \quad k = 0$$



Low, mid, high, mid, Low

