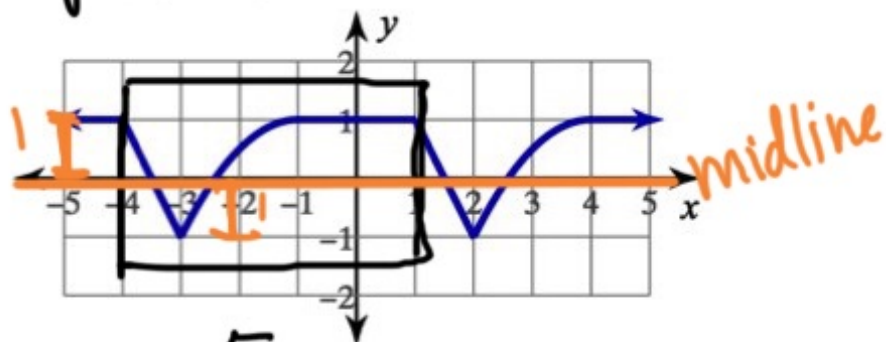# 10.3 Sine and Cosine Graphs

Periodic Functions: A function is *periodic* if the function EXACTLY repeats itself. (copy & paste)

The **PERIOD** is how long it takes for the function to repeat. (horizontal distance)

The **MIDLINE** is a horizontal line that cuts the graph in half $\left(y = \underline{\quad}\right)$

The **AMPLITUDE** is the distance from the midline to the maximum or minimum point on the graph.

A. periodic

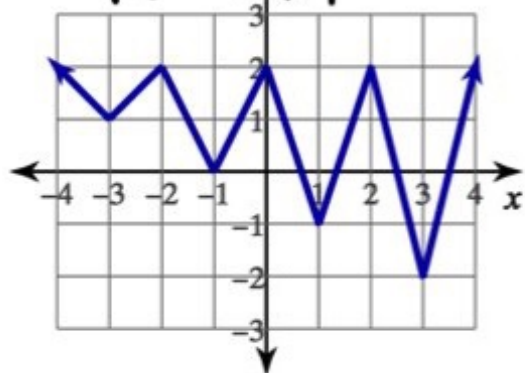midline

Period: ___5___

Amplitude: ___1___

B. Periodic

12

12
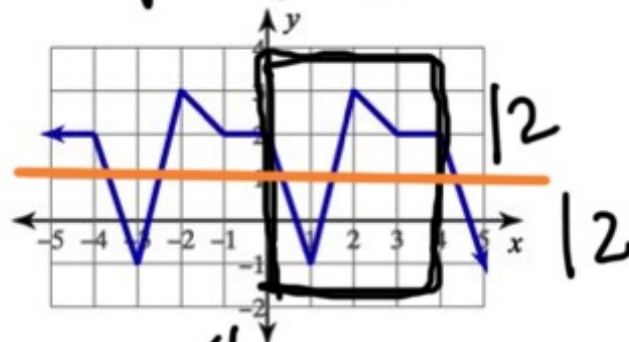
Period: ___4___
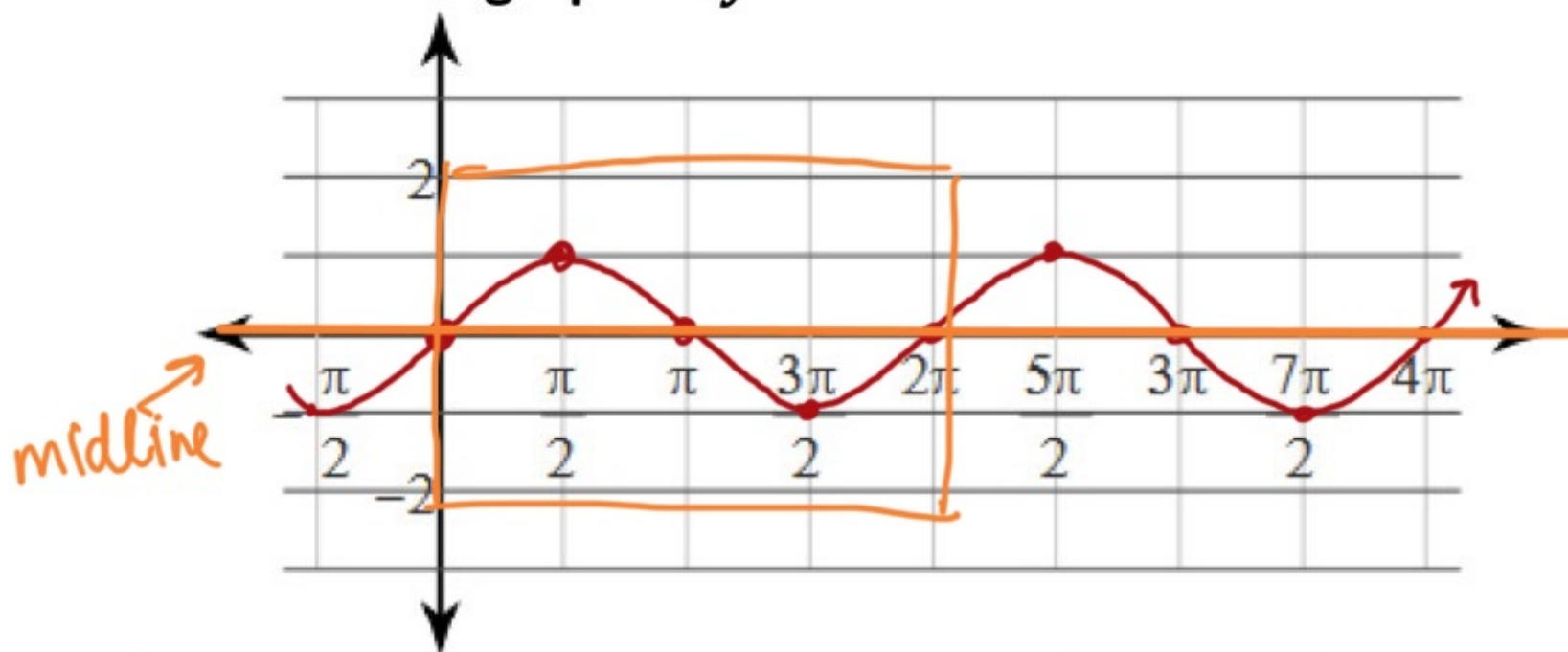
Amplitude: ___2___

C. Not periodic

Period: _____

Amplitude: _____

Pattern ≠ periodic

Sketch the graph of $y = \sin x$.

midline

Period: 2π

Midline: $y = 0$
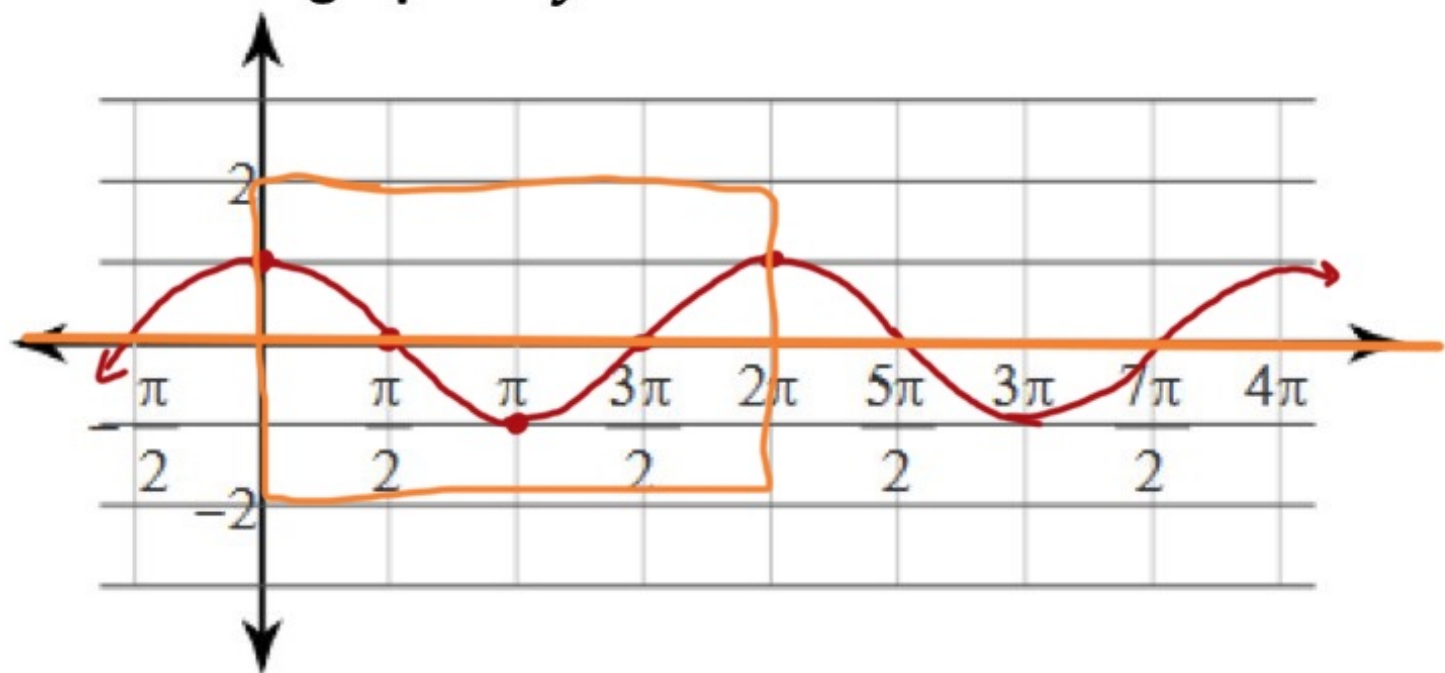
Amplitude: 1

Max y-value: 1

x Domain: $(-\infty, \infty)$

y Range: $[-1, 1]$

y-intercept: $(0, 0)$

5 point pattern mid-top-mid-bottom-mid

$\left(\text{each pt. is @ } \dfrac{\text{period}}{4}\right)$

Sketch the graph of $y = \cos x$.

Period: 2π

Midline: $y = 0$

Amplitude: 1

Max y-value: 1

Domain: $(-\infty, \infty)$

Range: $[-1, 1]$

y-intercept: $(0, 1)$

5 point pattern top-mid-bottom-mid-top

$\left(\dfrac{\text{period}}{4} \right)$