Lesson Notes 8-3 Graphs of Sinusoidal Functions

A sinusoidal function is any periodic function whose graph has the same shape as that of y = sinx. In this lesson, we must determine all characteristics of sinusoidal functions (range, equation of midline, amplitude, period) given a graph of the function.

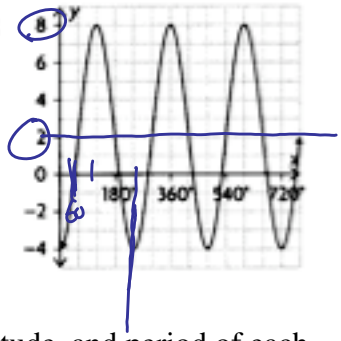
Example 1: Describe this graph by determining its range, equation of its midline, its amplitude, and its period.

R: $-4 \le y \le 8$

midline: $y = 2$

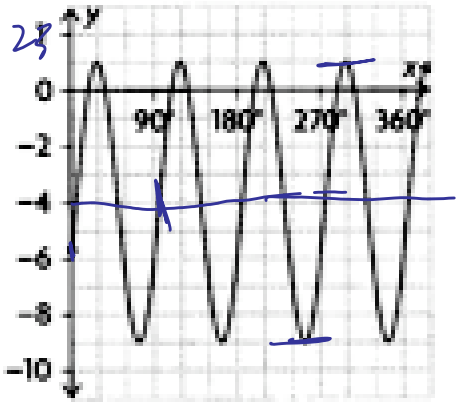
amp: 6

period: 240



Example 2: Determine the range, equation of the midline, amplitude, and period of each graph.

a)



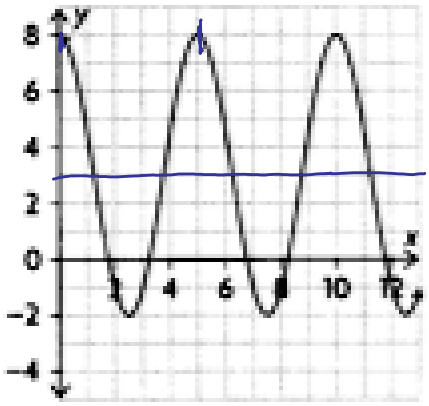
range: $-9 \le y \le 1$

midline: $y = -4$

amp.: 5

period: 90

b)



range: $-2 \le y \le 8$

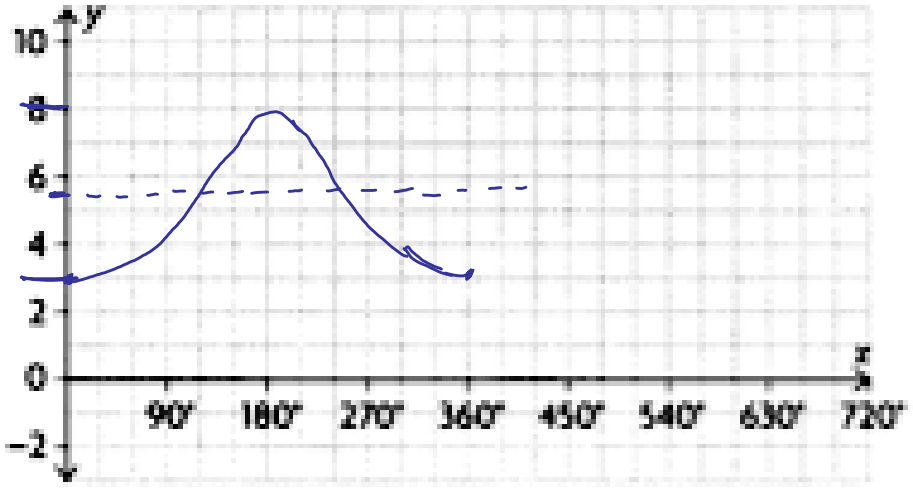
mid: $y = 3$

amp.: 5

period: 5

Example 3: Sketch a possible graph of a sinusoidal function with each set of characteristics. Draw and label the midline.

a) y-intercept: 3
domain: {x| 0° ≤ x ≤ 720°, xER}
range: {y| 3 ≤ y ≤ 8, yER}
period: 360°



b) y-intercept: 0
domain: {x| 0 ≤ x ≤ 12, xER}
minimum value: 4
maximum value: -4
period: 3