

**Practice Problem 1**

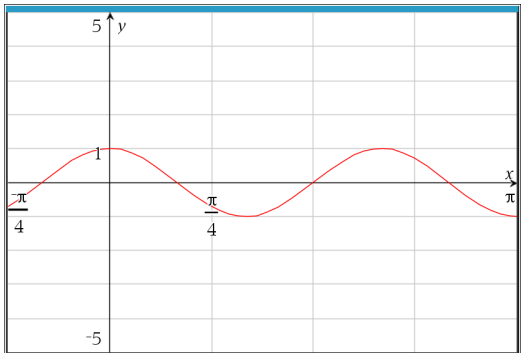
The daily tide measurements on the beach off the coast of South Carolina are modeled by a sinusoidal function. The high tide was measured at 6.29 ft and the low tide was measured at 0.37 ft pm Labor Day. Based on these measurements, what is the amplitude of the sinusoidal function?

- (a) 6.66 ft
- (b) 3.33 ft
- (c) 5.92 ft
- (d) 2.96 ft

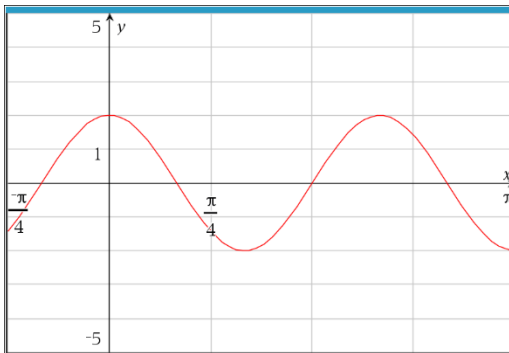
**Practice Problem 2**

Which of the following is the graph of  $g(x) = 2 \cos(3x)$  in the  $xy$ -plane?

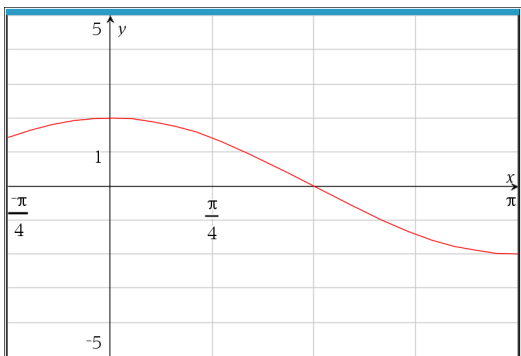
(a)



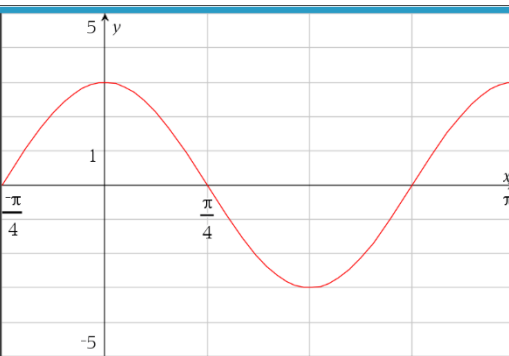
(b)



(c)



(d)



**Practice Problem 1 Solution:**

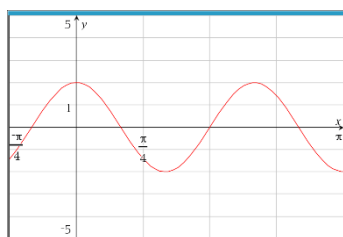
(d) 2.96 ft.

To find the amplitude given the minimum and maximum values of a sinusoidal function, subtract them and divide by 2:

$$\frac{6.29 - 0.37}{2} = \frac{5.92}{2} = 2.96 \text{ ft}$$

**Practice Problem 2 Solution:**

(b)



The distance from the midline ( $x$ -axis) to the peak is 2, matching the amplitude of  $g(x) = 2 \cos(3x)$  and you see one and a half complete cosine curves/cycles from 0 to  $\pi$ , therefore from 0 to  $2\pi$  you would see three complete cosine curves/cycles, making (b) the correct choice.

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