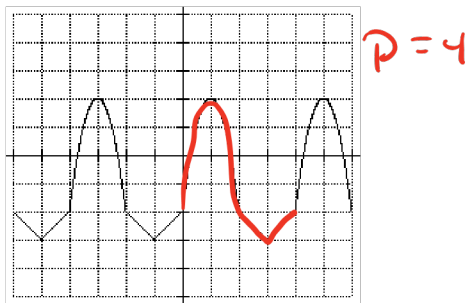


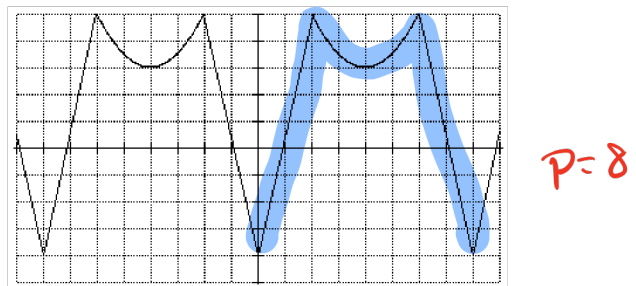
**Hw 11.1**

Given below are sections of two periodic functions,  $f(x)$  and  $g(x)$ . Use the graphs to answer the questions that follow.

Graph of  $f(x)$



Graph of  $g(x)$



Find each of the following function values using the graphs of the periodic functions pictured above. Show your work.

1.  $f(21) = f(4(5) + 1) = f(1)$   
 $= 2$

2.  $f(30) = f(4(7) + 2)$   
 $= f(2)$   
 $= -2$

3.  $f(-25) = f(-28 + 3)$   
 $= f(3)$   
 $= -3$

4.  $g(-64) = g(0) = g(8(-8) + 0)$   
 $= -4$

5.  $g(84) = g(8(10) + 4)$   
 $= g(4)$   
 $= 3$

6.  $g(34) = g(3(11) + 2)$   
 $= g(2)$   
 $= 5$

7. Explain how you used the period of  $g(x)$  to find the function values in problems 4-6.

I used the period length times the number of cycles to get a number within 1<sup>st</sup> cycle from  $[0, 8]$  and then added a number to complete the number given.

8. Create a table of values representing 5 points that can consecutively be connected by line segments to create one cycle of a periodic function whose period is 7. Explain why your table of values can represent a periodic function.

$x$	0	1	3	6	7
$f(x)$	8	0	2	4	8

9. Create a table of values representing 5 points that cannot consecutively be connected by line segments to create one cycle of a periodic function. Explain why your table of values cannot represent a periodic function.

$x$	-2	-1	0	1	2
$x^2$	4	1	0	1	4

10. Using your table of values from question 8, state the domain, range, and amplitude of the function.

segments to create one cycle of a periodic function whose period is 7. Explain why your table of values can represent a periodic function.

$x$	0	1	3	6	7
$f(x)$	8	0	2	4	8

$D = \mathbb{R}$   
 $R = [0, 8]$   
 $Amp = 4$

9. Create a table of values representing 5 points that cannot consecutively be segments to create one cycle of a periodic function. Explain why your table

11. Sketch a graph of 2 complete cycles of your function from question 8.

