PreCalculus **Name**_____
WS: 4.5 Review **Date**_____**Block**_

1.) Given $y = 3\cos(2\theta + \pi) - 2$, state the amplitude, period, phase shift, and vertical translation.

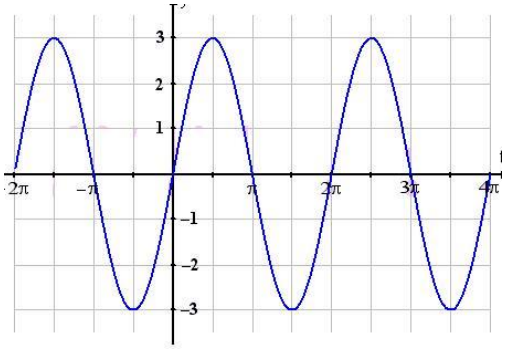
2.) Create a cosine function with the given information:

Amplitude: 8
Period: $\frac{2\pi}{3}$
Phase Shift: right $\frac{\pi}{21}$
Vertical Shift: up 5

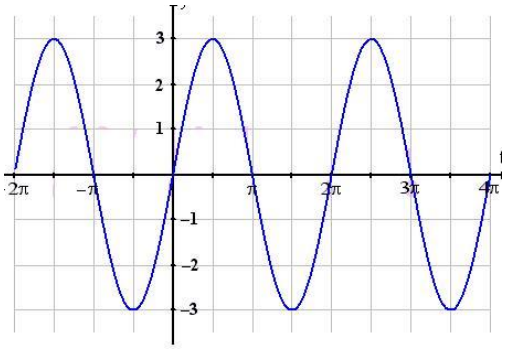
Describe the relationship between the graphs of f and g.

3.) $f(x) = 3\cos x$
$g(x) = -3\cos x + 4$

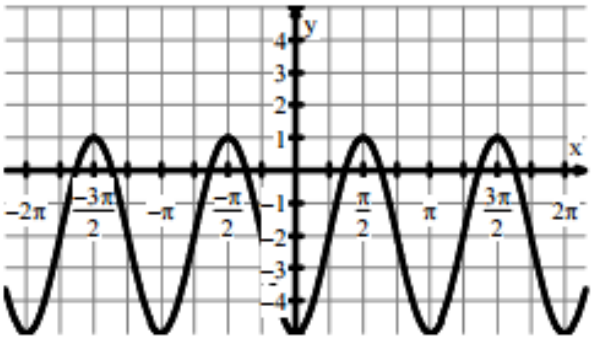
4.) Write the sine function of the given graph. Box the period you used to write your function.



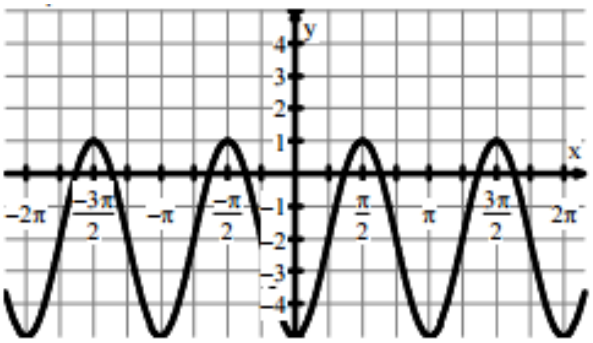
5.) Write the cosine function of the given graph. Box the period you used to write your function.



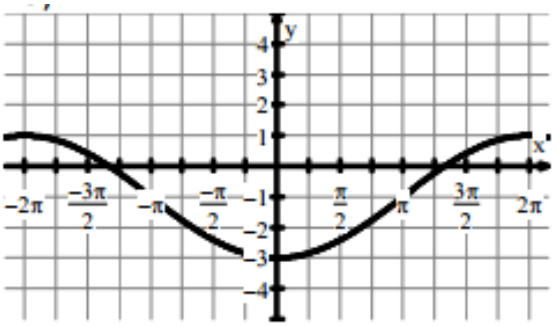
6.) Write the sine function of the given graph. Box the period you used to write your function.



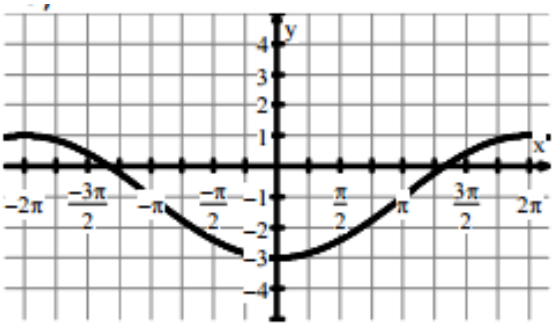
7.) Write the cosine function of the given graph. Box the period you used to write your function.



8.) Write the sine function of the given graph. Box the period you used to write your function.

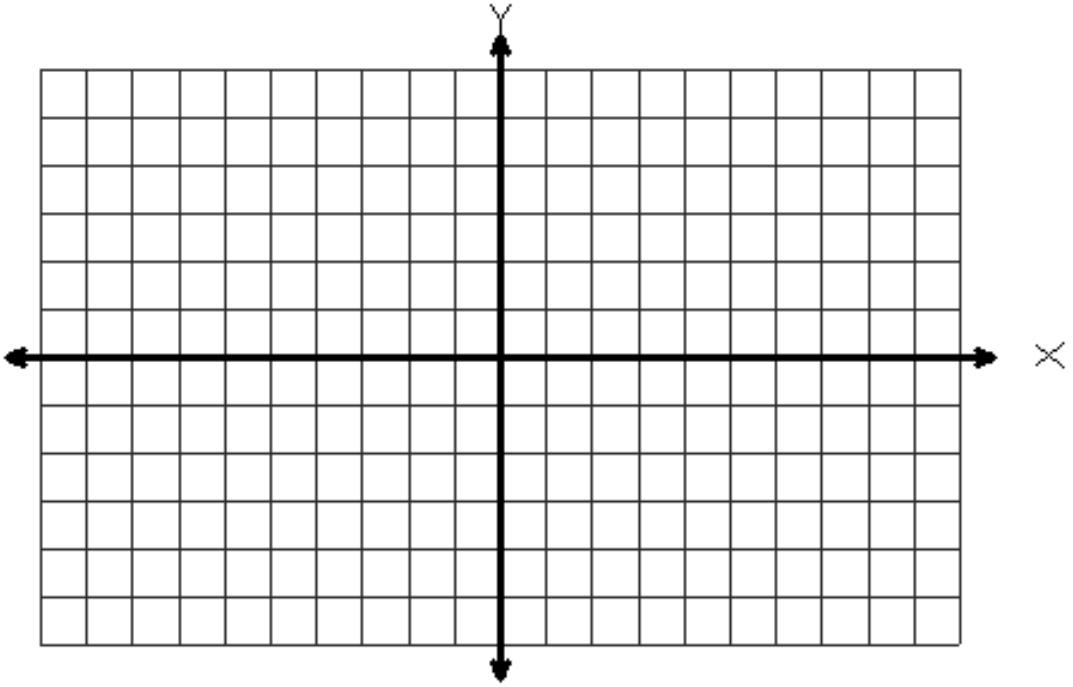


9.) Write the cosine function of the given graph. Box the period you used to write your function.



Sketch the graphs of *f* and *g* on the same coordinate plane. Include at least two full periods for each.

10.) $f(x) = 3\cos x$
$g(x) = -3\cos x + 4$



Sketch the graphs of *f* and *g* on the same coordinate plane. Include at least two full periods for each.

11.) $f(x) = 2\sin\left(2x - \frac{\pi}{2}\right)$
$g(x) = -2\sin\left(2x + \frac{\pi}{2}\right)$