MATH 30 - Precalculus. Homework 2. Due Th. 02/14/2019. Professor Luis Fernández

NAME:_____

Write your answers in other sheets and **STAPLE this one to your other sheets.**

1. Let $f(x) = x^2 + x - 2$ and $g(x) = \dfrac{x}{x^2+3}$. Find, **without simplifying**,

a) $f(x+4) =$

b) $f(x^2-1) =$

c) $g(x^2) =$

d) $g(tail) =$

e) $f(g(x)) =$

f) $g(f(x)) =$

g) $f(f(g(x))) =$

h) $g(g(f(x))) =$

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2. Find the domain of the following functions.

a) $f(x) = \dfrac{1}{x^2+x-12}$

b) $g(x) = \dfrac{3x+2}{x^2+2x-2}$

c) $h(x) = \dfrac{1}{x^2-1} + \dfrac{x}{x^2-4}$

d) $i(x) = \sqrt{3-x} + \sqrt{x+4}$

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3. Given $f(x) = 2x + 1$ and $g(x) = x^2 + 3$, find and simplify:

a) $(f \circ g)(3)$

b) $(f \circ g)(x)$

c) $(g \circ f)(x)$

d) $(f \circ g \circ f)(x)$

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4. Given $f(x) = \dfrac{1}{x}$ and $g(x) = \dfrac{2}{x-1}$, find and simplify

a) $(f \circ g)(3)$

b) $(f \circ g)(x)$

c) $(g \circ f)(x)$

d) $(f \circ g \circ f)(x)$

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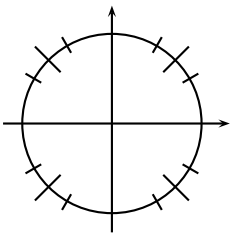
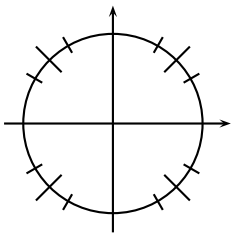
5. Draw the following angles in standard position in the circles provided.

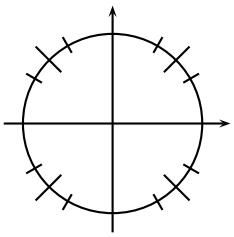
a) $\dfrac{5\pi}{4}$



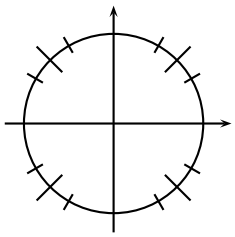
b) $\dfrac{11\pi}{6}$



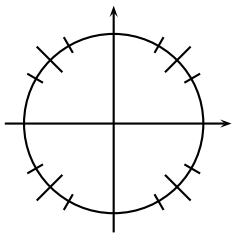
c) $\dfrac{2\pi}{3}$



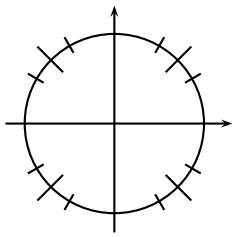
d) $\dfrac{13\pi}{4}$



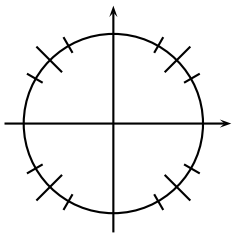
e) $\dfrac{5\pi}{2}$



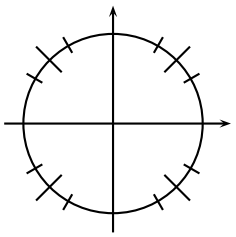
f) $\dfrac{7\pi}{6}$



g) $\dfrac{7\pi}{3}$



h) $\dfrac{5\pi}{3}$



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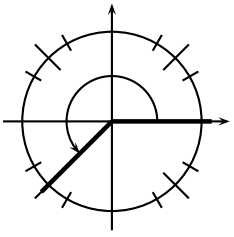
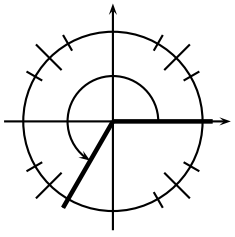
6. Write, in the space provided, the value IN RADIANS of the angles given in the following pictures.

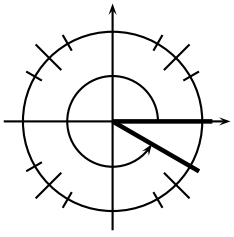
a) .....



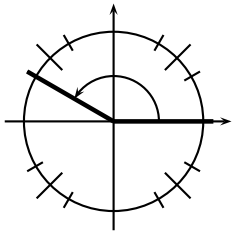
b) .....



c) .....

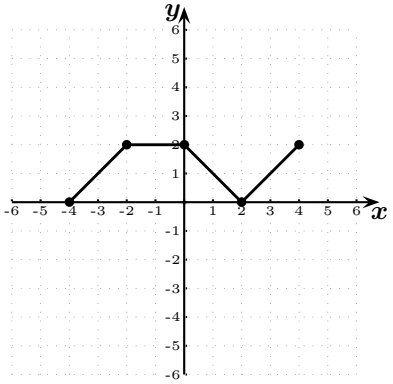


d) .....

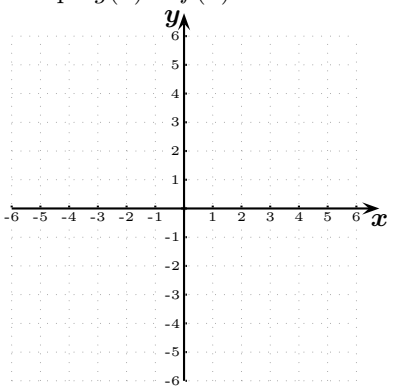


7. Use the graph of $y = f(x)$ to graph each function g. You can use the axes provided in this sheet or do the graphs **in graph paper**.

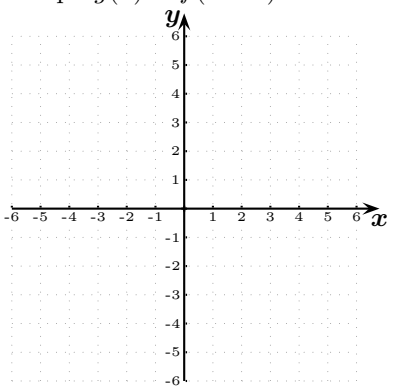
This is the given original graph of f.



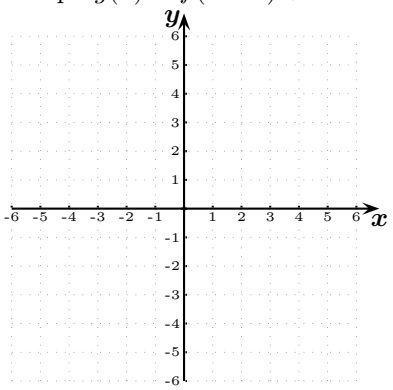
a) Graph $g(x) = f(x) - 1$.



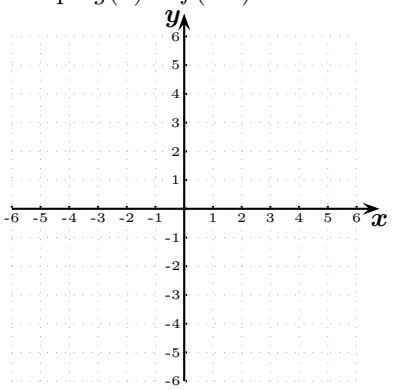
b) Graph $g(x) = f(x - 2)$.



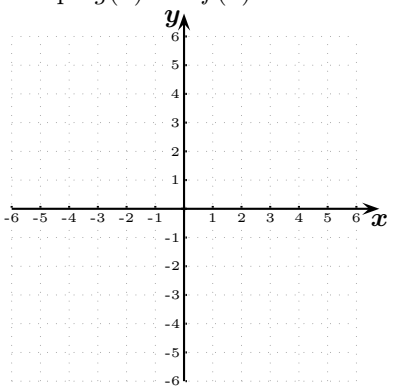
c) Graph $g(x) = f(x - 2) + 3$.



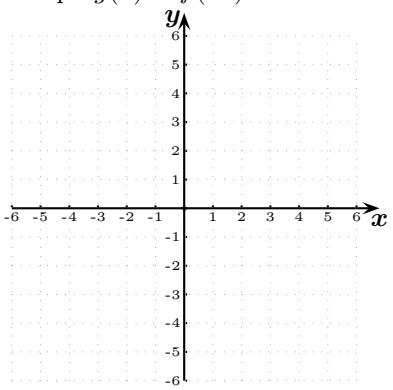
d) Graph $g(x) = f(-x)$.



e) Graph $g(x) = -f(x)$.



f) Graph $g(x) = f(2x)$.



g) Graph $g(x) = 2f(x)$.