

K	T	Com	Full Name: _____ Open-Notebook Assignment Unit 7: Combinations of Functions ****Your communication mark will be based on your overall form, clarity and use of terminology throughout the assignment.****
4	6	3	

You may use your notebooks, calculators, and textbooks and/or online resources in our google classroom as well as collaborate with classmates in our MHF4U class in preparing your response to the following questions. You may **not** copy answers from one another and may **not** consult with anyone outside of our class; to do so would constitute academic dishonesty.

Please sign here to attest that the work submitted is your academically honest attempt: _____

Part A: Knowledge (4 marks)

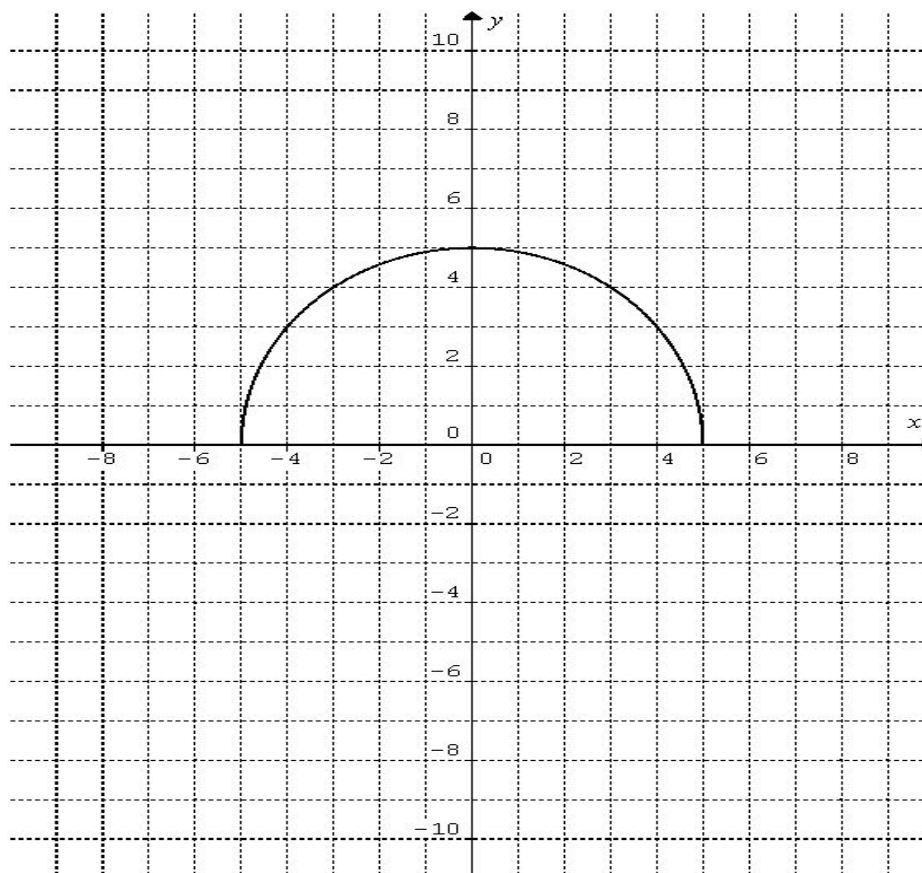
1) Let $y = f(x)$ be the function graphed below.

a) Create and graph $g(x) = ax + b$, where you choose a and b (both non-zero).

My equation for $g(x)$: $g(x) = \underline{\hspace{2cm}}$

b) Produce a detailed graph of $y = f(x) - g(x)$.

Note: this must be done by hand on graph paper.



Part B: Thinking (6 marks)

1a) Create three functions f , g and h such $f \circ g \circ h(x) = \sqrt{\frac{2}{x-1}} + 17$. Justify your answer by performing the composition. (6 marks)

My functions:

My Justification:

$f(x) =$ _____

$g(x) =$ _____

$h(x) =$ _____

1b) Find *another, completely different* set of possible functions f , g , and h such $f \circ g \circ h(x) = \sqrt{\frac{2}{x-1}} + 17$. **Note:**
ALL THREE of f , g , and h must be different from your choices above.

Again, justify your answer by performing the composition.

My functions:

My Justification:

$f(x) =$ _____

$g(x) =$ _____

$h(x) =$ _____