Strand: Algebra   Name:__***KEY***____

Skill Addressed – Understanding Functions and their Graphs   **Blk: ___**

Activity: Part 4: Functions and Function Notation

Definition and Vocabulary:

Function: A function is a rule that can be written using algebraic symbols.
A   function can only produce one distinct output value for each
input   value.

Meet Frank:

$F(x) = 3x + 10$

"Hello – I'm Frank, but you can call me F(x) for short. I'm very predictable; no matter what value you give me, I will always triple it, and then add 10 to it… Don't ask me why? It's just my rule! [In fact – it's my "function" in life! Hee hee.] I am a <u>function</u> because if you keep giving me the same value, I will always produce the same unique output or result for that input value. For example, every time you give me 4 as an input value, I will always return 22 as an output value – the output value is distinct!

When I'm all by myself, you can just call me "*y*". In that case, I look like "$y = 3x + 10$". But if you see me with other functions that are different, we need to have different names. For example, there is sly George… $G(x) = x^2 - 5$

George is different from me, but he is just as predictable!   Any input value that you give to George, he will square it, and then subtract 5. Do you think that George qualifies as a function? How do you know?

__***George is a function because if you give him any input value, there is only one possible output value for that input.***_____

_____

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_____

Find: F(6) = __***28***__

F(-2) = __***4***____

G(6) = __***31***_____

G(-2) = ____***-1***____

F(6) + G(6) = __***28 + 31 = 59***____

F(6) + G(6) = __***(3x + 10) + (x² − 5) = x² + 3x + 5***_____