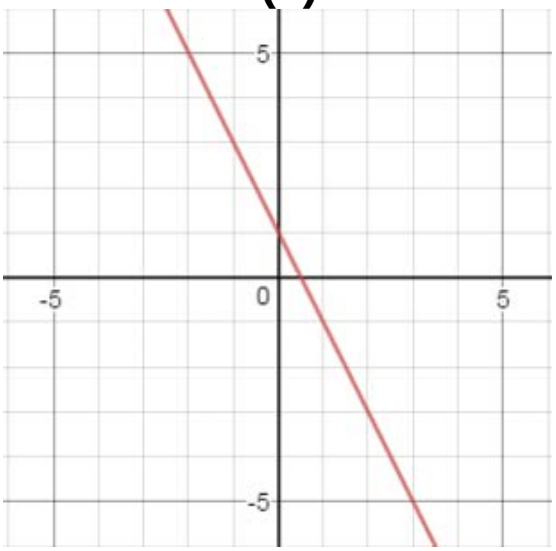
Multiple Representations of Functions Task

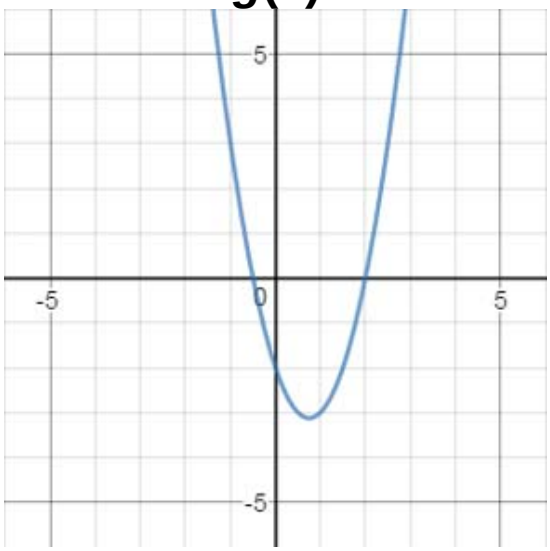
x	f(x)
-3	7
-2	5
0	1
1	-1
4	-7

x	g(x)
-2	12
0	-2
1	-3
2	0
4	18

***f*(x)**



***g*(x)**



1. Find $f(1)$ and $f(g(1))$.

   a. $f(1) =$ -1

   b. $f(g(1)) =$ 7

   c. How did you solve each and why did you choose your approach?

   Table or Graph

2. Find $f(-1)$ and $f(g(-1))$.

   a. $f(-1) =$ 3

   b. $f(g(-1)) =$ -5

   c. How did you solve each and why did you choose your approach?

   Graph

3. Using the same functions above, how would you find $f(^2/_3)$ and $f(g(^2/_3))$?

   Find the equation of the line
   Estimation

Teacher Extension –

1. How can you modify these problems to change the cognitive demand?

    Possible solutions:

    <u>Increase demand:</u>

    - Incorporate verbal descriptions.
    - Mix problems up to require students to determine which representation to use.
    - Have students create their own problem.
    - Algebra 1 – Don't provide the tables and graphs with the specific problems.
    - Algebra 2 – Have the composition require a graph for one solution and a table for the other. Put both functions on 1 graph.

    <u>Decrease demand:</u>

    - Tell students which representation to use within the problem.

2. How does the use of multiple representations inform you about student understanding? What misconceptions would you anticipate?

    Possible solutions:

    - Do students understand the big picture? Do students have a strength?
    - Misconceptions – Students transposing the x- and y-coordinates.