1. [22 points] Consider the functions $f(x)$, $g(x)$ and $h(x)$ given below:

x	-1	0	1	2
$f(x)$	-5	6	2	1

$h(x) = 2x - 7$
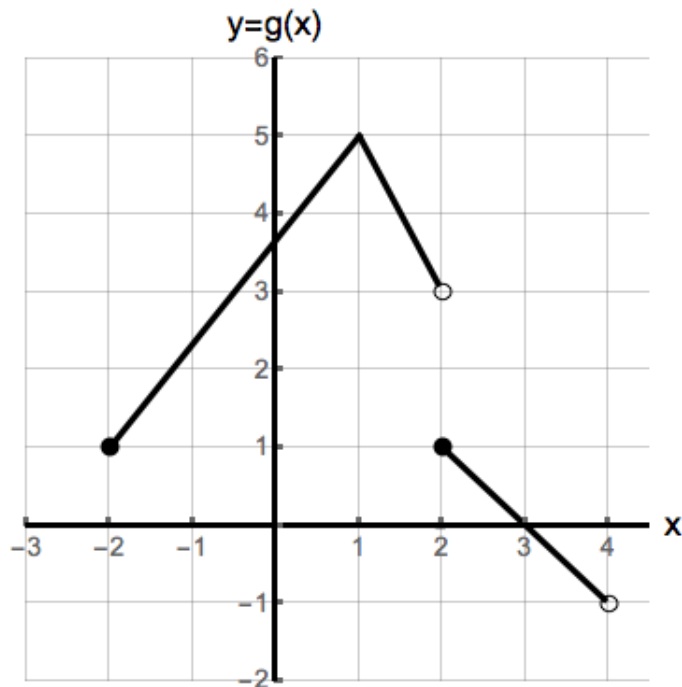
a. [4 points] Find the domain and range of $g(x)$. Use inequalities or interval notation to express your answers.

Domain:_____   Range: _____

b. [11 points] Find the values of the following expressions. If any of the values is not defined, write "Undefined".

i) $g(2) =$ _____

ii) $(f(0))^{-1} =$_____

iii) $h^{-1}(2) =$_____

iv) $g(f(2)) =$ _____

v) $g(g(-2)) =$ _____

vi) $h(f(-1) + 1) =$ _____

c. [4 points] Find all solutions to the equation $h(g(x)) = -5$. Recall that $h(x) = 2x - 7$ and the graph of g has been copied below in part d) for your convenience.

Answer: _____

d. [3 points] Find a formula for $k(x)$ in terms of the function g.

$$k(x) = \text{\underline{\hspace{4cm}}}$$

y=g(x)

y=k(x)