1. Give values so that the table represents an invertible function.

m	1	2	3	4	5
$f(m)$	0.09	____	____	7.80	9.40

2. For what values of A and K will $S(t) = At^3 - K$ be a one-to-one function?

3. The life expectancy, L, of a child can be expressed as a function of the year of birth.

$$L(y) = \frac{y + 66.94}{0.01y + 1} \qquad\qquad y = 0 \text{ corresponds to 1950.}$$

A. Find the value of $L(40)$. Use algebra to find the value of $L^{-1}(76)$.

B. Give practical interpretations of $L(40)$ and $L^{-1}(76)$. (*Include your values from part A.*)

4. Let $f(x) = \dfrac{x}{1 + x^2}$ and $g(x) = \dfrac{1}{x + 1}$. Find $f(g(x))$ and $g(f(x))$. Simplify completely. (Write as a simple fraction.)

5. Use the numerical representation of $f(x)$ below to match the numerical information in column A with the symbolic representation in column B.

x	-4	-2	0	2	4
$f(x)$	5	1	6	2	7

Note: One function in column B has no representation in Column A.

Column A

1. _____

x	-4	-2	0	2	4
$g(x)$	7	3	8	4	9

2. _____

x	-2	-1	0	1	2
$h(x)$	5	1	6	2	7

3. _____

x	-2	0	2	4	6
$m(x)$	5	1	6	2	7

4. _____

x	-8	-4	0	4	8
$n(x)$	5	1	6	2	7

5. _____

x	-4	-2	0	2	4
$g(x)$	-5	-1	-6	-2	-7

6. _____

x	4	2	0	-2	-4
$k(x)$	5	1	6	2	7

7. _____

x	7	5	3	1	-1
$u(x)$	11	6	10	5	9

Column B

a. $f(x-2)$

b. $f\left(\dfrac{1}{2}x\right)$

c. $f(x)+2$

d. $f(-x)$

e. $f(x-3)+4$

f. $-f(x)$

g. $f(x+2)$

h. $f(2x)$