1. Note the contrapositive of the definition of one-to-one function given on of the text is: If a ≠ b then f(a) ≠ f(b). As we know, the contrapositive is equivalent to (another way of saying) the definition of one-to-one.

 a. Consider the following function f: R → R defined by f(x) = x2 - 9 . Use the contrapositive of the definition of one-to-one function to determine (no proof necessary) whether f is a one-to-one function. Explain

 b. Compute f ° f.

 c. Let g be the function g: R → R defined by g(x) = x3+ 3. Find g -1

Use the definition of g-1 to explain why your solution, g-1 is really the inverse of g.

2. Compute the double sums.

a. $\sum\_{i=1}^{3}\sum\_{j=1}^{2}$(i-j)

$b. $ $\sum\_{i=1}^{3}5$

3. $A=\left|\begin{matrix}-1&-1&1\\2&1&-1\\-1&-1&-2\end{matrix}\right|$, $B=\left|\begin{matrix}1&1&-1\\-2&2&1\\2&1&3\end{matrix}\right|$ and $C=\left|\begin{matrix}2&-2&\\-1&0&\\1&1&\end{matrix}\right|$

Compute:

 (a) AC+ BC (It is much faster if you use the distributive law for matrices first.)

(b) 2A - 3A

(c) Perform the given operation for the following zero-one matrices.

$\left|\begin{matrix}0&1&1\\1&0&1\\0&1&1\end{matrix}\right|$®$\left|\begin{matrix}1&1&1\\0&1&1\\0&0&1\end{matrix}\right|$