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Assignment-2

(1) let $x = \{1, 2, 3, 4\}$. Determine whether the following functions or not on x into x.

(i) $f = \{(1,1), (2,1), (3,1), (4,1), (3,3)\}$

(ii) $f = \{(1,1), (2,1), (3,1), (4,1)\}$

(iii) $f = \{(2,1), (3,4), (4,4)\}$

(2) let $S = \{1,2,3,4\}$ and $f = \{(1,3), (2,2), (3,4), (4,1)\}$ $g = \{(1,4), (2,3), (3,1), (4,2)\}$. find $g^{-1} \circ f \circ g$ and $f^{-1} \circ g^{-1} \circ f \circ g$.

(3) let $f(x) = 2x+1$ and $g(x) = x^2 - 2$. find

(i) fog

(ii) fof

(iii) $fogof$

(iv) $f^{-1} \circ g^{-1} \circ f \circ g$

(4) If $f(a) = 2a+1$ and $g(a) = \frac{a}{3}$. verify that

$(gof)^{-1} = f^{-1} \circ g^{-1}$

(5) find $\lceil 2.67 + \lfloor 9.46 \rfloor - (\lceil 0.47 + \lfloor 8 \rfloor \rceil) \rceil$

(6) find :

(a) $\sum_{j=1}^{6} 2j$ (b) $\sum_{k=0}^{4} (2^{k+1} - 2^k)$ (c) $\sum_{i=0}^{3} \sum_{j=0}^{2} (3i+2j)$

(1) What are the terms a_0, a_1, a_2 and a_3 of the sequence $\{a_n\}$ where

$a_n = \{(-2)^n\}$.