Answer on Question #83062 – Math – Discrete Mathematics

Question

determine that whether the functions from real numbers to real numbers are one to one
f(n)=n^3
f(n)=n^2+1

Solution

If the statement *f(a) = f(b)* implies *a = b*, then the function *f(x)* is one to one.

We apply this test to check the function $f(n) = n^3$:

$a^3 = b^3$

$a = b$

Therefore $f(n) = n^3$ is one to one.

We apply this test to check the function $f(n) = n^2 + 1$:

$a^2 + 1 = b^2 + 1$

$a^2 = b^2$

$a = b$ or $a = -b$

Therefore $f(n) = n^2 + 1$ is not one to one.

Answer:

$f(n) = n^3$ is one to one.

$f(n) = n^2 + 1$ is not one to one.