## True or false

If $f(n) = \Theta(g(n))$ and $g(n) = \Theta(h(n))$, then $h(n) = \Theta(f(n))$

If $f(n) = O(g(n))$ and $g(n) = O(h(n))$, then $h(n) = \Omega(f(n))$

If $f(n) = O(g(n))$ and $g(n) = O(f(n))$ then $f(n) = g(n)$

Solove:

$$\frac{n}{100} = \Omega(n)$$

Show using limits

a. $1000n^2+50n = O(n^2)$

b. $n^3/1000 \neq O(n^2)$

Which functions are in $O(n^2)$?

$n^{1/2}$ $n^2$ $n^2+n^2+n^2$ $n^3$ $n^{2.1}$

Show

a) $n^2 + 50n = O(n^2)$

b) $n = O(n \lg n)$

c) $n^2+n^2+n^2 = 3n^2 = O(n^3)$

Show

$n^3 \neq O(n^2)$

Show

a) $2n^3+n \neq O(n^2)$

*b)* $5n^3+10n \neq O(n^2)$

c) $3n^2 + n = \Omega(n^2)$

d) $n = \Omega(\lg n)$

Which functions are in $\Omega(n^2)$?

$n^{1/2}$ $n^2$ $n^2+n^2+n^2$ $n!$ $n^3$ $n^{2.1}$ $n^{1.999}$

Show

a)$2n^2+n$ is in $\Omega(n^2)$

b)$n \neq \Omega(n^2)$

c)$3n + 5 \neq \Omega(n^2)$

Show

a)$2n^2+n \neq \Omega(n^3)$

b)$n^2/2-2n = \Theta(n^2)$

Show that $½n^2 - 3n \in \Theta(n^2)$

**Using limits show**

a)$n^2/\lg n = o(n^2)$

b)$n^2 \neq o(n^2)$

Show

$n^2/\lg n \neq \omega(n^2)$

What is the $\lim_{n\to\infty} n^{1.9999}/n^2$?