$(1+x)^n>1+nx$ при $x>=-1$, nэN

$n=1$
$(1+x)^1>1+x$

Let k hold
$n=k$
$(1+x)^k>1+kx$

than for k+1 we have to prove:
$(1+x)^{(k+1)}>1+x(k+1)$

$(1+x)^{(k+1)}=(1+x)^k*(1+x)$
$(1+x)^k*(1+x)>(1+kx)(k+1)$
$(1+kx)(k+1)>1+x(k+1)$
$1+x(k+1)=1+xk+x$
$(1+kx)(x+1)=1+x+kx^2+kx$
$1+x+kx^2+kx>1+xk+x$

$(1+x)^{(k+1)}=(1+x)^k*(1+x)>(1+kx)(k+1)=1+x+kx^2+kx>1+xk+x=1+x(k+1)$

$bn=(1-1/n)^n$
возрастающая

$bn=(1-1/n)^n$
$b(n+1)=(1-1/(n+1))^{(n+1)}$

b(n+1)/bn must be no less than 1
$b(n+1)/bn=((n+1-1)/(n+1))^{(n+1)} / ((n-1)/n)^n=(n)^{(n+1)}/(n+1)^{(n+1)} / (n-1)^n/n^n=$
$=(n)^{(n+1)}*n^n/ [(n+1)^{(n+1)}(n-1)^n]=n^{(2n+1)}/ [(n+1)*(n+1)^n*(n-1)^n]=$
$=n^{(2n+1)}/ [(n+1)*\{(n+1)*(n-1)\}^n]=n^{(2n+1)}/ [(n+1)*\{n^2-1\}^n]=n*n^{2n}/ [(n+1)*\{n^2-1\}^n]=$
$=n/(n+1) * n^{2n}/ \{n^2-1\}^n=n/(n+1) * [n^2/ \{n^2-1\}]^n=n/(n+1) * [(n^2+1-1)/ \{n^2-1\}]^n=$
$=n/(n+1) * [1+1/ \{n^2-1\}]^n>n/(n+1) * [1+n/ \{n^2-1\}]>n/(n+1) * [1+n/ \{n^2\}]=$
$=n/(n+1) * [1+1/ n]=n/(n+1) * [(n+1)/ n]=1$