SNS COLLEGE OF TECHNOLOGY



(An Autonomous Institution) Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai Accredited by NAAC-UGC with 'A++' Grade (Cycle III) & Reaccredited by NBA (B.E - CSE, EEE, ECE, Mech&B.Tech.IT) COIMBATORE-641 035, TAMIL NADU



Strong induction [Second pranciple of mathematical Induction 7 In the form, we use the same bashe Step as before, but we use a different Productive step.

i). Assume that P(j) is tout too j=1, 2, ..., to

i)). we have to prove that P(K+1) is true

well oscilling properity:

Every honempty set of non-negative integers has a least element

Pigeonhole psuble

If (n+1) pigeon occupies n holes then at least one hole has more than the progeon Proof :

Assume that there are (1+1) pigeons and n boles. To prove atleast one hole has more than one pigeon. we prove this by method of contriadiction.

Suppose not, at least one hole has not more than one pageon.

From +1998 each and every hole has exactly one pigeon. Strice these are n holes, which implies we have

totally n progeons which is a contradiction to own assumption.

Hence at least one hole has more than one plyeon. -

bronenalizzed progeonbole privileple

It m' pigeon occupies in holes then atleast [m-1]++ propeons. one hole has more than

Home [7] denotes the greatest entegen 1033 than on equal to 2, which is a real number.

(HoH) (HoH) (

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19MAT301/Discrete Mathematics

C.Saranya, AP/Maths

1

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1. Show that among too people, atteast 12,05 them
used born in the same norm.

$$M = \text{pumbers } q \text{ frights = NQ } q \text{ people = 100}$$

 $h = NQ ; q \text{ Holes = NQ } q \text{ month = 12}$
By accountinged PHPs
 $\left[\frac{100-1}{12}\right] + 1 = q$ were born q_1 the hame month.
3. Show that q_1 as dictionaries in a library lensarin
 a total q_1 to 325 pages, then one of the dictionaries
must have atteast 1614 pages.
No q_1 foloses : $m = NQ ; q_1$ pages = 40.326
NQ q_2 boloses : $n = NQ ; q_1$ of d_2 to d_2 the accounting
 $\left[\frac{m-1}{n}\right] + 1 = \left[\frac{100}{25}, \frac{325-1}{2}\right] + 1$
 $= 1614$ pages q_2 the dictionaries = 25
By ControlFreed PHP.
 $\left[\frac{m-1}{n}\right] + 1 = \left[\frac{100}{25}, \frac{325-1}{2}\right] + 1$
 $= 1614$ pages q_3 the distionaries
 $MQ : q bolose : n = NQ ; q forcup of 6 people, atteast
 q_1 show that q_2 a group of 6 people, atteast
 q_1 show that q_1 a group of 6 people, atteast
 q_1 show that q_1 a group of 6 people atteast q_2 must
 $P = NR ; q_1$ belows q_1 in $P = \frac{10}{25}$ at $P = \frac{10}{12}$
 $P = NR ; q_1$ belows q_2 of colour q_2
 $P = NR ; q_1$ below q_2 is q_2 and q_3 is q_2 and q_3 is q_2 in q_3 .
 $M = NR ; q_1$ biggles q_2 is q_2 in q_3 is q_1 and q_2 is q_2 in q_3 .
 $P = NR ; q_1$ biggles q_2 is q_3 in q_1 is q_2 in q_3 .
 $P = NR ; q_1$ biggles q_2 is q_1 in q_2 .
 $P = NR ; q_1$ biggles q_2 is q_3 is q_1 in q_2 .
 $P = NR ; q_1$ biggles q_2 is q_3 in q_1 is q_2 in q_3 .
 $P = NR ; q_1$ biggles q_2 is q_3 in q_1 .
 $P = NR ; q_2$ biggles q_3 in q_3 is q_1 in q_3 .
 $P = NR ; q_1$ biggles q_2 is q_3 in q_1 in q_3 .
 $P = NR ; q_1$ biggles q_2 is q_3 in q_1 .
 $P = T + 1$
 $= 8 : Regulase world be the same
 $R = R ; q_2$ biggles world be the same
 $R = R ; q_3$ biggles q_3 .
 $P = R ; q_3$ biggles q_3 in q_3 .
 $P = R ; q_3$ biggles q_3 in q_3 .
 $P = R ; q_3$ biggles q_3 in q_3 .
 $P = R ; q_3$ biggles q_3 in q_3 .
 $P = R ; q_3$ biggles q_3 in q_3 .
 $P = R ; R ; q_3$ b$$

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