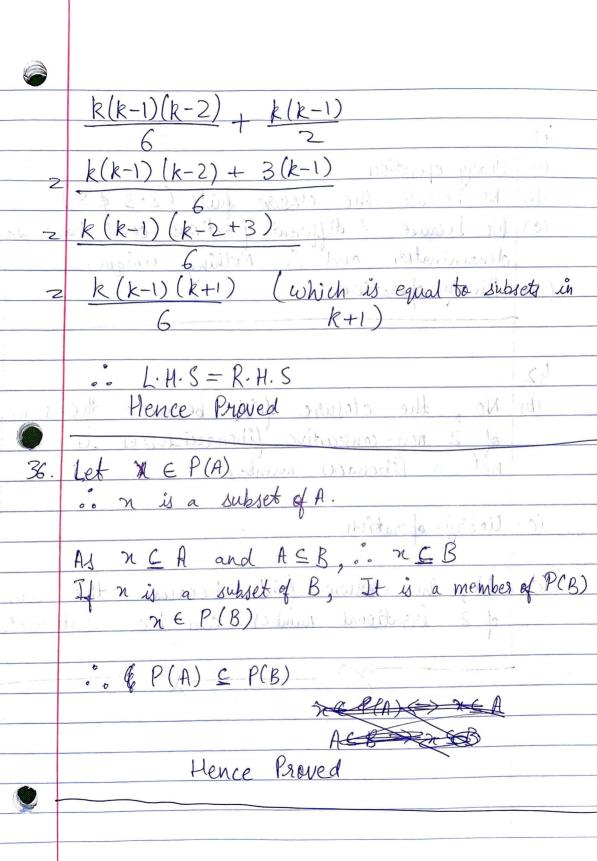
MATH 22-003 Vistrit Panday 1 MATH 221 HOMEWORK-1 (a) True (b) True (because &1,3,73 & & {41,3,74,14) Color False True (d) (e) True (because {13 ∈ S, \$13 € \$1,3,9,103) (f) True (g) False : 107 (kg) chancente 22. (it should be o CIA) I. (I) False (a)  $0 \neq \{0\}$ , both are different) False (b) True (C)(d) False (A and C can be equal but not equal to B) (e) False od (k+1) Subject des pareja can prove it wing Mathematical Induction. 26. A set with 3 elements has exactly I subset with 3 elements, i.e., the set itself.

=> n(n)(n-2) { If we put 3 in n(n-1)(n-2).  $\frac{1}{3(3-1)(3-2)} = \frac{3\times2\times1}{2}$ .. The base is proved Assuming for k elements.

(10 1. En 2 k. El 3 2221) sward) shot (6)  $\frac{k(k-1)(k-2)}{k(k-1)(k-2)}$ : for (k+1) elements

>> (k+1) · k · (k+1) b and blumb di) while

(humble see itsel (p) + 1) Let n be a member of set (k+1) elements If we take the value from en. 25; we get k(k-1) subsets, for pairing n with 2 element subsets of k-element set. .. The number of 3 element subset is:



40. (a) Unary operation (b) No because the closuse fails (3.3 \$ 5)

(c) No because 2 different fractions could have same denominator and ". Nothing unique.

(d) Binary operation (d) Binary operation No, the closure fails because the sum of 2 non-consecutive fibonacci series is not a Fibonacci number. n is a subject of A. (c) Unary operation (d) No, the closure fails because the sum of 2 irrational number can be retional.