

Set: A set is a woll collection of well defined objective or things.

Types of set :- (1) Empty set :- A set having no elements) is called empty set.

St is denoted by \${}^{?}

2) Singleton Set: - A set having one element as only is called singleton set

Subset: A get is called subset of the set Big for all xEA ⇒ xEB. gt is expressed as A = B

Power Set: The family of all subsets of a set A is called bower set of A.

Example A = {a,b} P(A) = {Ø, {a}, {b}, {a,b}}

No of elements in subset of a set = 2"

where n = no of elements in original set

(a) $A = \{1,4\}$ $B = \{4,5\}$ $C = \{5,7\}$ then find $(A \times B) \cap A \times C$

AXB= {(1,4), (1,5), (4,4), (4,5)} AxC= {(1,5), (1,7), (4,5), (4,7)}

: (AXB) n(AXC) = {(1,5), (,5)}}

Let A, B, C be any three sets then prove that AX(BOC) = (AXB) N(AXC) let (my) & Ax(BDC) Sple: : DIEA & yE BAC or SLEA EYEB & YEC or (XEARSYEB) & (XEASYEC) XE AXB & 2, y & AXB & AA, y & AXC (ouy) E (AXB) O (AXC) Dr Ax Bnc) = (AxB) n (Axc) let (x,y) e (AxB) o (Axc) : XEAXB & YEAXC DI XEA & B DIEB & YEA & YEC (x,y) & AXB & (x,y) & Axc RED & SED & SED & YEC DEAR YEBRYEC SIFA & YEABAC or (Sizy) E AX(BO) (AxB) xn (AxC) = Ax (Bnc)

A.B.C.D are any four sets then brove that 98 (ANB) x (CND) = (AXC) (BXD) let (x,y) e (AnB) x (cnD) 50013 RE ANB & ye COD XEA & XEB & YEC & YED or (x,y) E AXC & g(x,y) ECXD (x,y)E (AxC) (CxD) (AnB) x CCOD) = (AxC) n(BXD) - D let (noy) E (Axc) n(BxD) (x,y) EAXC & (x,y) EBXD or XEASYECS XEBS, YED ble ADB) & yecho or (or y) E (ADB) x (CDD) : > (AAB) x (COO) = AA (ATTE) (AXC) (BXD) = (ANB)X(CND) -(3) From (1) 8(2) (AnB) x (COD) = (AxC) (IB XD) (49)

Se ABB are any two sets then prove that TERRITOR STATE OF STREET (4) (An (B-A)) = Ø let (209) @ An (B-A) Sol7 9 : (xy) EA & (xy) EB-A Pet DIE BAN (B-A) DIEA & (DIEB-A) XEA 8 (NEB 8 X & A) (NEA ENEA) & (NEB) (nex) (nes ne Box DLE D Hence An (B-A) = Ø