Set: - "collection of distinguishable objects' fully defined by the membership (E Graphs relation. (Note: No order, no multiple copies). eg. S=tgreen, blue, red]
green ES, orange ES, 5 &S. Special Sols: Ø: empty set 2: integers positive

R: reals R: nonnegative reals

N: natural numbers {0,1,2,...} Forming new sets: 200 of dame to upot toda prises AUB = { X: XEA or XEB} A MB = [x: xeA and xeB] now and xeB] A-B= (x: XEA and X & B)

Relations: A=B: x EA iff x EB	
ACB: XEA implies XEB	
ACB: ACB and A + B	
Graphs.	13
- Love Tarellines and a principal and the Town	
Directed Graph (aka digraph) G, is a pair	
(V, E), where V is a finite set of vertices (at	a node
and E is a set of ordered pairs of vertices	
" State of the self and the self of the se	1
e.g. V= [1, 2, 3]	
(I)	-021
$E = \{(1,2), (2,2)\}$	
(2) 3 la Man on who all stall & tuples (order)	
topies (ovder)
Undirected Graph G is a pair (V E), where	
Vis a finite set of vertices and E is a set	0.
of unordered pairs full where u + v.	
the interes to the Investigate	
eg 1 2 V= {1,2,3,4}	
E = [81,23 [2,43]	
3 6	
sets (no order)	
Choosing what type of graph to use	
TRANSPORTATION: · direct flights (undirected graph)	
Social returner friends (directed graph)	, 1
SOCIAL NETWORKS: . friendship (undirected) . "has crush on" (dive	icted)
18xx by Asx x) = 8 A	2

	$\mathbb{Q} \xrightarrow{e} \mathbb{Q}$ $e = (\mathbf{q}, \mathbf{v})$
	e leaves from u to v e incident from u to v y is adjacent to u
	out degree: number of edges starting from u in degree:
	e.g u has in degree 3 and out degree 1
	\$\tau_{\text{\tinit}}\text{\tin}\text{\tert{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tert{\text{\text{\texit{\text{\texi}\tint{\text{\ti}\text{\text{\texitil\tint{\ti}\til\text{\text{\text{\text{\text{\text{\
Hara	
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