(a) For a minimum support threshold of 30%, apply the concept of the apriori algorithm and identify all the frequent itemsets. Manual calculations on paper only, and show your analysis steps.

CASSAS	BOTHERS, {BREAD, SOAPS, { BOTHER, SOAPS, { S	S Wither Con
S		د مالد ا رکه
ZSOOP,	PEASS, EMIK, PEASS	
\$886A	D, SOAP, PEASY	
	- T	
		EBUGAD, BUTHER, SOAPS EBUGAD, SOAP, PEASS

5 - 50 - 15 - 15 - 15 - 15 - 15 - 15 - 1		
BOEAD -	7	
100013		
Butter -	6	
C-A-0 =	8	
SOAP		
MIIK -	5	
PEAS	6	
	32	
	¥	

@ Support Threshold = 30% ItEMS: BYEAD, BOHLEY, SOAP, MILK, PEAS Support for {Break} = {Butter} = 4 = 40% - ~ Tottal Transactions = 10 Support for [BOGAD] => (SOAP) = 6 = 60% - V Support for & BrGAD & => & MIINS = 3 = 30% - ~ Support for & BOCKADS => & PEASS = 4 = 40% -Support for & BUHH6 3 => & SOAP3 = 5 - 50% -Support for & But+ 603 => {MIK} = 1 = 10% Support for {BUHEN } => { PGAS} = 2 = 20/6 SOMP Support for & SOMPG => MINK = 2 = 30% V Support for {SOAP3 => PEAS = 5 = 50% -PEAS SUPPOR FOR & MUTIKY => PEAS = 3 = 30% - V

SAAS (ATTURY 3 Ittms support for {BXCAD, butter} => SOMP = 4 = 40% support for & BOKAD, BOTTERS => MTIK= 10 = 10% suppost for {BOGAD, BOTHERS => PEAS = 1 = 10% Support for & BREAD, SOMPG => SOMP = 2 = 20% Support for & BREAD, SOAP = > PEAS = 3 - 30% support for & BOCAD, MILKG=> PEAS = 2 = 20% Support for (Butter, MITHES => PERS = 1 = 100/0 SUPPORT FOX ESOAP, PEAS, MILKS = 1 = 10% Support for & BUHB, PGAS, MEI (6) = 1 = 10%

(b) Now, for a minimum confidence threshold of 50%, apply the concept of the apriori algorithm and identify all valid association rules. Manual calculations on paper only, and show your analysis steps.

VALUES UIES	
VALDRUJES:	
BXEAD => BUTTEN	, Butter => BXEAD
BYGAD => SOAP	, SOAP =) BOKAD
MILLA => BOCAD	
BOGAD => PEAS	, PEAS => BYEAD
SORP - MIH	MEIK => SOAP
SOAP => PEAS	, PEAS => SOAP
MIK => PEAS	, PEAS => MILK
SOAP => { BYGAD, BUTHERS	& BOCAD, BUTTER 3 => SOAP
BUTTER => & BYEAD, SOAPS	&BOCAD, SOAPS => BOHE
BOKAP -> ESOAP, PEASS	ESOAP, PEAS & => BOOKAD
PEAS => &BOEAD, SOAPS	&BOCAP, SOAPS => PEAS
GOAP => EPEAS, BYEADS	{PEAS, BYEAD} => SOAP
18	ESOAP, PEASS => BOGAP

57% 50/62 64	confidence for & BOTEAD, BUTT 683 = 4 = 2 = 60%
V 50% < 6	Confidence for Storgar, SOAP3 = 6 = 3 = 75%
× 50% × 3 -	confidace for EBOGAD, MITIKG = 3 - 60%
V 106%: 4/16 -	confloace for & BOGAD, 1971-163 = 4 = 570%
√ 50% C 3 5	online to Essal, MILLS = 3 \$50%
50% 2 5	on Fipact for ESDAP, PGASG = 5 250%
V. 50% (3	confident for EMIK; PEASS = 3 - 50%

Onfidace for 2 BXLAD SORP => 2 BXLAD, BOTTER? = \(\frac{9}{8} = \frac{50}{8} = \frac{9}{8} = \frac{3}{6} = \frac{50}{8} = \frac{9}{8} = \frac{3}{6} = \frac{50}{8} = \frac{9}{8} = \frac{3}{6} = \frac{50}{8} = \frac{9}{8} = \frac{50}{8} = \frac{50 PEAS => & BX+AD, SOAPS Confidence for Elbotad, Solaps =>/PEAS = 3 = 50%

SOAP => & PEAS, BOORD = 3 = 36 = 2 = 1000 = 10%

BOEAD => & SOAP, PEAS = 3 = 3 = 2 50% 2BOEAB, SOOP => PEAS = 3 = 50% { PEAS, SOUPS => SOAP 3 > 586 { SOAP, PEASS => BOEAD 3 = 596