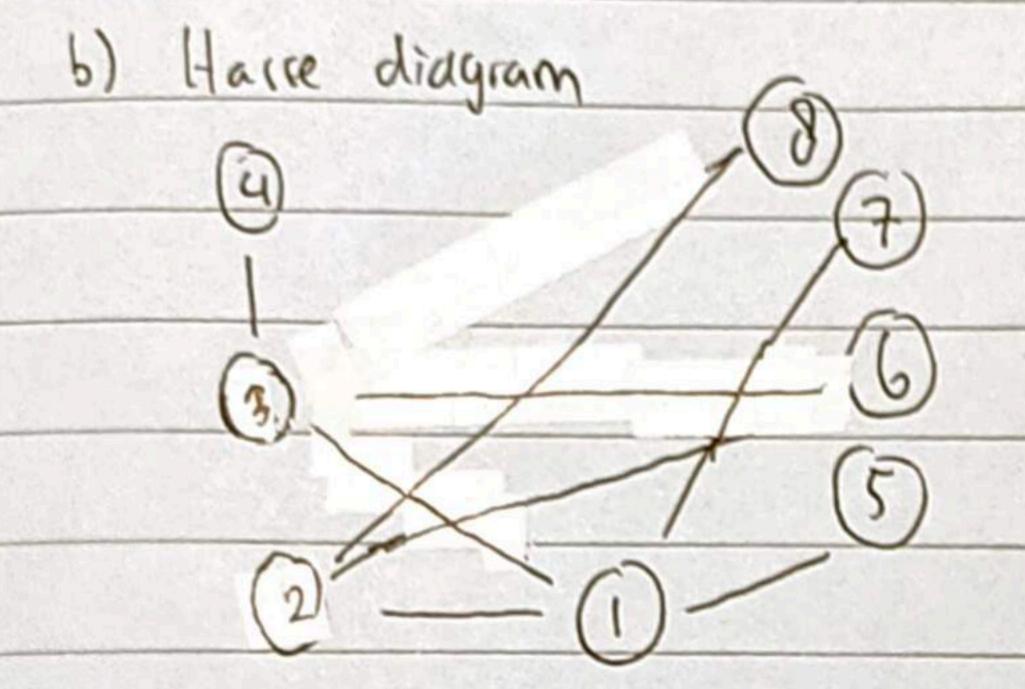
WAK MATEMATERA DISKRIT 2021/2022

Kelas: B

Tipe A

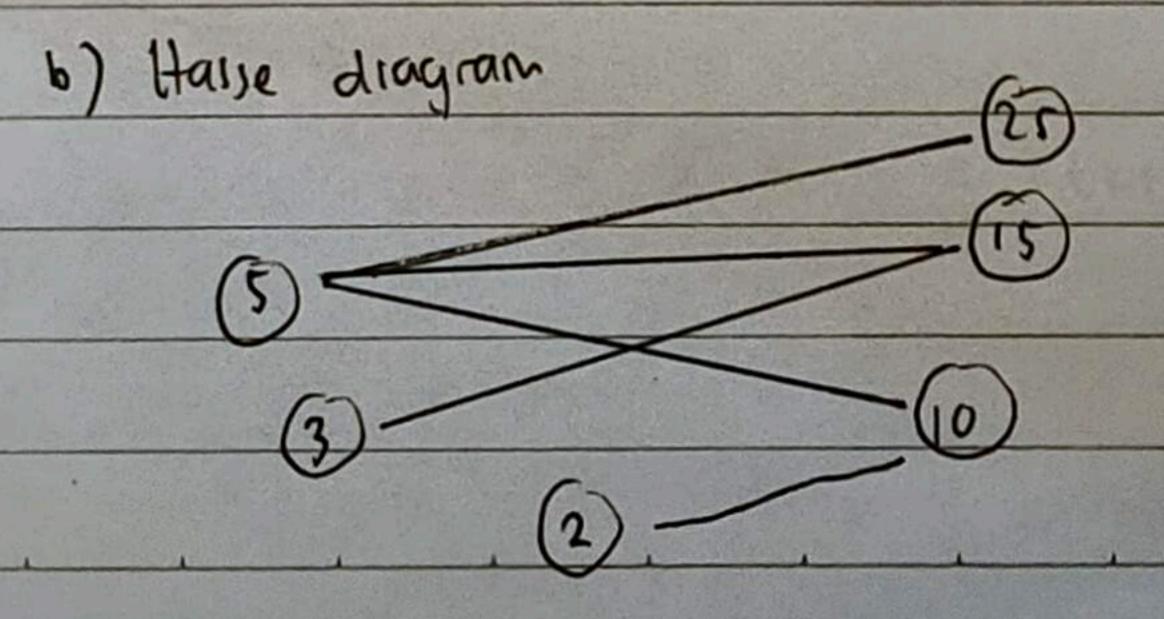
R= [(a,b) | a devides b3

 $[AI] a) R = \{(1.1), (1.2), (1.7), (1.4), (1.5), (1.6) \\ (1.7), (1.8), (2.2), (2.4), (2.6), \\ (2.8), (3.3), (3.6), (4.4), (4.8), \\ (5.5), (6.6), (7.7), (3.8) \}$



- () An equivalence relation sets need to be reflective, symetry, and transitif
 - This sets is reflective hecause ($\forall x \in A$) $x \not\in X$. In other words, every $x \in X$ element in the sets have loop.
 - : This sets is not symetrical, because $(\forall x,y \in A) \times Py \longrightarrow yPx$. For proof, there is (1,2) but there is no (2,1). Thus the sets is not symetry and the sets is not equivalence relations.

 $[A \ 2] \ a) R = \{ (2.12), (2.10), (3.3), (3.15), (5.5) \}$ (5.10), (5.15), (5.25), (10.10), (11.11) $(15.15), (25.25) \ 3$



- c) Determine if these cets is equivalence relation!
 - This sets is reflective because $(\forall x \in A) \times Rx$. In other words, every \times element in the sets have 100p.
 - This rets is not symetrical because $(\forall x,y \in A) \times Py \rightarrow y Px$. For proof, there is (5,10) but there is no (10,5).

 Thus the sets is not synetry and the sets is not equivalence relation.

Tipe B

BI Proof that Least Common Multiple of j, k is jk -> 1cm (j,k) = jk

: We know that if ab is an integer,

then:

ab = gcd(aib) · |cm(aib)

Now, we know that gcd (j,k) = i while

jk = g cd (j,k) - lcm (j,k).

These proof that lcm (j.k) = jk = jk gud(j.k) i

Thus, km (j,k) = jk 15 true

 $|B_2|$ Proof that $r^{q-1} \equiv 1 \pmod{q}$ $\gcd(q,r) = 1$

ir = ir (mod q) 14i, 54 (q-1)

Thus the proof of $r^{q-1} \equiv 1 \pmod{q}$ is true

Tipe C	Thus P(n) is true
ID Number: 21/481767/TK/53170	
xy xi xi	[C3] How many ways to place A
	student from diffent departement tutor
[Co] Set 1 = (8-7) mod 3+1	assistant in A+B-1 paralel classes at DTETI
Set B = (0.+1+3) mod 4+1	A = 2 = n
-) Jet A = 1 mod 3 +1 = 2	A+B-1=2
Set B = 4 mod 4 +1 = 1	
	The way to put it is using DOUB!
[C] Recursive algorithm to compute \(\sum_{i=0}^{\cdot\}\). A 1	
4	= E Schij) while
$\sum_{i=0}^{A} \frac{1}{B}$	$j=1$ $j-1$ $i \neq j$
	j=1 $j-1$ $j-1$ $j=1$ $j-1$ $j=1$
Initial value : $f(0) = \frac{2}{10} \cdot \frac{1}{10} = \frac{2}{10} = \frac{2}{10} \cdot \frac{1}{10} = \frac{2}{10} \cdot \frac{1}{10} = \frac{2}{10} = \frac{2}{10}$	0 0
1 coloquetà colo	$S(2,1) = \frac{1}{1!} \sum_{i=0}^{\infty} (-i) (\frac{1}{0}) (1-0)^{i}$
$f(1) = \frac{2!}{-!} = \frac{2!}{-2}$	i=0
10 39 100 100 100 100 100 100 100 100 100 10	
The recursive algorithm is	$S(2,2) = \frac{1}{2!} \sum_{i=0}^{\infty} (-i)^{i} {2 \choose i} (2-i)^{2}$
00 00 f (i+1) = ef (i) · 1	2! ==0
Because all iteration i will resulting	= 2 + (-1) = 2
to devide A with 1, than the recursive	$\frac{k}{2}$ $S(n,j) = 1+2 = 3$ mays.
algorithm should be true.	j=1
[C2] We are going to prone inductively,	[Cy] Construct longuage: 6=(V,T,SP)
if i E Z, than Kn ktl E Z.	V= { A 4 x 4 10 U B 4 x 4 10 3
	T=[A,x,B], A=2 da B=2
Set proposition: P(n) = f(n+1) = f(n).1	P= ES-> AB, S-> Ax, x-> AB, x-> Ax,
(2) In microsoft Marchin M (2)	X->XB,X->Bx3
: Basis step : P(0): f(0+1) = f(0).1	
when fco) = 2 then fcoti) = 2	[C5] I = [marjo, durtan, apple, duku?
	FSM
:- Inductive Steps: P(k)> P(k+1)	0,1 1,0
= Inductive Hipotesis:	
P(k): f(k+1) = f(k)	(So) (SI) (SI)
: Show: P(k+1) = f(k+2) = f(k+1)	0 0
	A
f(k+2) = f(k+1) = f(k)	
For P(k+2), the propossition is always true	

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