Tugas Matdis Himpunan dan Relasi

1 $A = \{1, 2, 3, 4\}$

Buatlah digraph dan tunjukkan apakah relasi berikut in ekuivalen:

$R_1 = \{(1,2), (1,3), (1,4), (2,3), (2,4),$
$\qquad (3,4)\}$
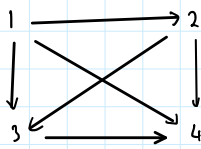
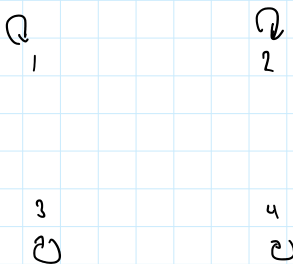
Reflektif   ✗
Simetric   ✗   } bukan Relasi ekuivalen
Transitif   ✓

$R_2 = \{(1,1), (2,2), (3,3), (4,4), (1,2), (1,3), (1,4)$
$\qquad ,(2,3), (2,4), (3,4)\}$
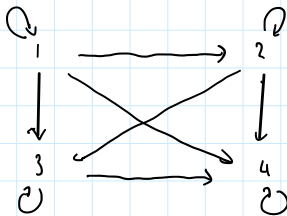
Reflektif   ✓
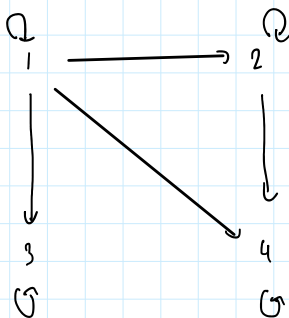Simetrik   ✗   } bukan Relasi ekuivalen
Transitif   ✓

$R_3 = \{(1,1), (2,2), (3,3), (4,4)\}$

Reflektif   ✓
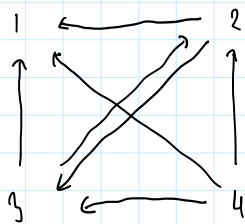Simetris   ✗   } bukan Relasi ekuivalen
Transitif   ✗

$R_4 = \{(1,1) (1,2), (1,3), (1,4), (2,2), (2,4), (3,3), (4,4)\}$

Reflektif   ✓
Simetris   ✗   } bukan Relasi ekuivalen
Transitif   ✗

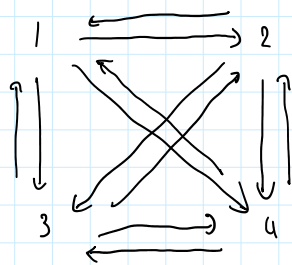$R_5 = \{ (2,1), (2,3), (3,1), (3,2), (4,1), (4,2), (4,3), (3,4) \}$

Reflektif   ✗

Simetris   ✗   }   bukan   Relasi ekuivalen

Transitif   ✗

$R_6 = \{ (1,2), (1,3), (1,4), (2,1), (2,3), (2,4), (3,1), (3,2), (3,4), (4,1), (4,2)$
     $(4,3) \}$

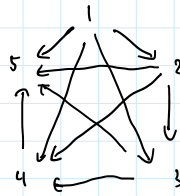Reflektif   ✗

Simetris   ✓   }   Bukan   relasi ekuivalen

Transitif   ✓

Relation on Z	R_1	R_2	R_3	R_4	R_5	R_6
Refleksi	✗	✓	✓	✓	✗	✗
Symetric	✗	✗	✗	✗	✗	✓
Transitif	✓	✓	✗	✗	✗	✓

[2] $A = \{ 1, 2, 3, 4, 5 \}$ dan $R = \{ (a,b) \in A \times A \mid a < b \}$

a)

	1	2	3	4	5
1	0	1	1	1	1
2	0	0	1	1	1
3	0	0	0	1	1
4	0	0	0	0	1
5	0	0	0	0	0

reflektif ✗
simetri ✗ } tidak equivalen
transitif ✓