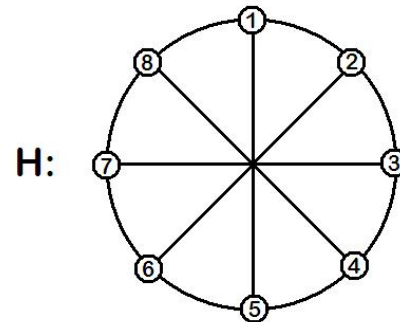
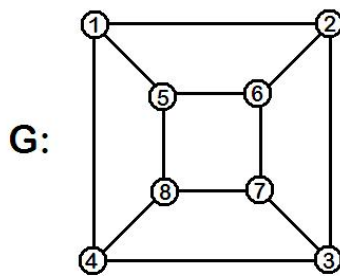


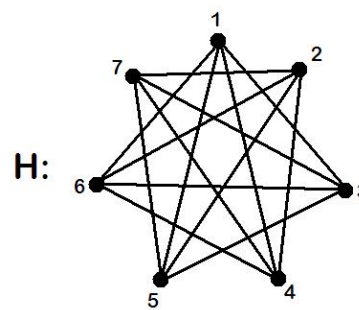
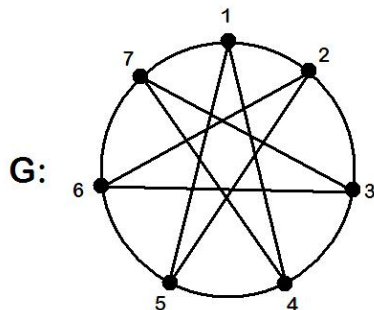
TW 314 (Toegepaste Diskrete Wiskunde)

Tutoriaal 4: 23 Februarie 2017

1. Skryf die orde, grootte, minimum graad en maksimum graad neer van K_n , $K_{r,s}$, $\overline{K_n}$ and $\overline{K_{r,s}}$.
2. Elke punt van die grafiek G van orde 14 en grootte 25 het graad 3 of 5. Hoeveel punte van graad 3 het G ?
3. Is die volgende grafieke isomorf of nie? Motiveer jou antwoord volledig.



4. Is die volgende grafieke isomorf of nie? Motiveer jou antwoord volledig.

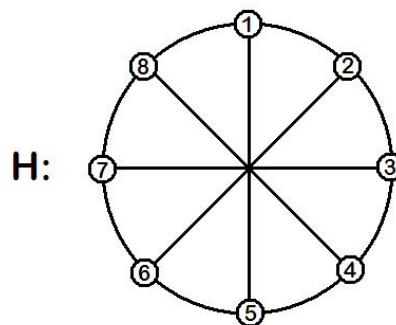
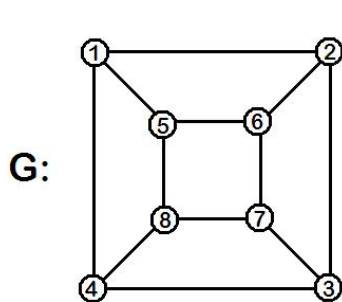


5. Bewys dat, as daar 'n self-komplementêre grafiek van orde n bestaan, dan $n \equiv 0$ of $1 \pmod{4}$.
6. Vind 'n self-komplementêre grafiek van order agt.
7. Teken al elf self-komplementêre grafieke van order vier.
8. Bewys dat elke grafiek van order $n \geq 2$ minstens twee punte met dieselfde graad het.
9. Bepaal of die volgende rye grafies is. Indien wel, konstrueer 'n grafiek met die toepaslike graadry.
 - (a) 4,4,3,2,1
 - (b) 3,3,2,2,2,2,1,1
 - (c) 7,7,6,5,4,4,3,2
 - (d) 7,6,6,5,4,3,2,1

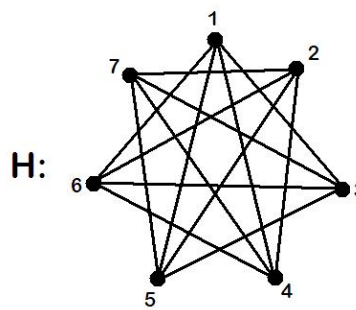
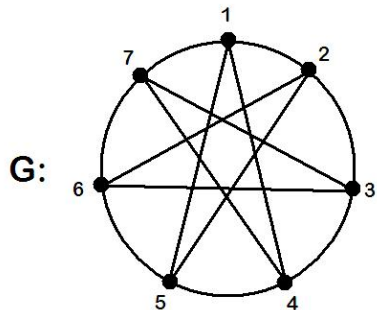
TW 314 (Applied Discrete Mathematics)

Tutorial 4: 23 February 2017

- Write down the order, size, minimum degree and maximum degree of K_n , $K_{r,s}$, $\overline{K_n}$ and $\overline{K_{r,s}}$.
- Every vertex of the graph G of order 14 and size 25 has degree 3 or 5. How many vertices of degree 3 does G have?
- Are the following two graphs isomorphic or not? Fully motivate your answer.



- Are the following two graphs isomorphic or not? Fully motivate your answer.



- Prove that, if there exists a self-complementary graph of order n , then $n \equiv 0$ or $1 \pmod{4}$.
- Find a self-complementary graphs of order eight.
- Draw all eleven non-isomorphic graphs of order four.
- Prove that every graph of order $n \geq 2$ has at least two vertices with the same degree.
- Determine whether the following sequences are graphical. If so, construct a graph with the appropriate degree sequence.
 - 4,4,3,2,1
 - 3,3,2,2,2,2,1,1
 - 7,7,6,5,4,4,3,2
 - 7,6,6,5,4,3,2,1