

Tkiz figs

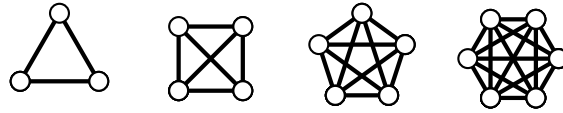
Contents

1	Graphs	4
1.1	Complete graphs	4
1.2	Cycles	4
1.3	Wheels	4
1.4	Complete bipartite	4
1.5	Stars	4
1.6	Petersen	4
1.7	Generalised Petersen	5
1.8	Small graph	5
1.9	Dodecahedron	5
1.10	Yohann's graph $L(W_5)$	5
1.11	Moser spindle	6
1.12	Golomb graph	6
1.13	Antiwebs	6
1.14	Möbius ladders	6
1.15	Binary tree	7
1.16	Matchings	7
1.17	3-dim cube	7
1.18	A 4-clique	7
1.19	A vertex cover	7
1.20	Cubic but no perfect matching	8
1.21	Small graph with basic defs	8
1.22	Small digraph with basic defs	8
1.23	A small multigraph	8
1.24	Edge contraction in a multigraph	9
1.25	5-wheel as minor in dodecahedron	9
1.26	K_4 -subdivision in Petersen	9
1.27	Line graph	9
1.28	Comb inequality for TSP	10
1.29	Odd cycles and Erdős-Pósa	10
1.30	Walls	10
1.31	Nowhere-zero \mathbb{Z}_3 -flow in the cube	10
1.32	Nowhere-zero \mathbb{Z}_5 -flow in the Petersen graph	11
1.33	Nowhere-zero 5-flow in the Petersen graph	11
1.34	Duals graphs	11
1.35	Mycielski's construction	12
2	Geometry	13
2.1	Fano plane	13
2.2	Affine plane	13
2.3	Projective plane on 13 lines	13
3	Polyhedra	14
3.1	Convex sets	14
3.2	Simplex, cube, octahedron	14
3.3	2-dim simplex	14
3.4	Constraints vs convex hull	14
3.5	Integral polytope	15

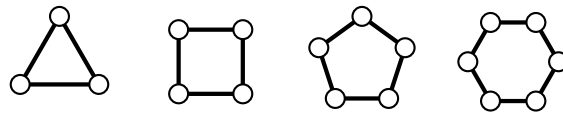
3.6	Projection	15
3.7	Recession cone	15
3.8	Chvátal inequality	15
3.9	Chvátal rank 2	16
3.10	Lift-and-project	16
4	Functions	17
4.1	Standard normal distribution	17
5	Misc	18
5.1	Congruences	18

1 Graphs

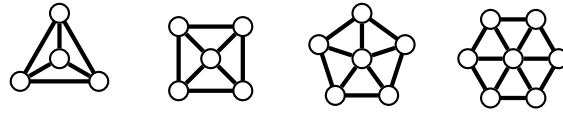
1.1 Complete graphs



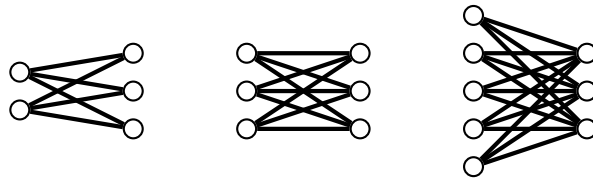
1.2 Cycles



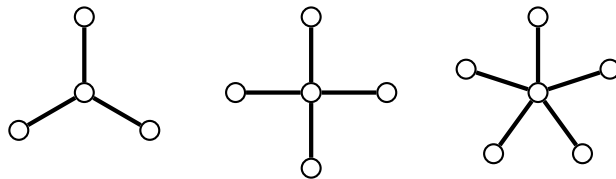
1.3 Wheels



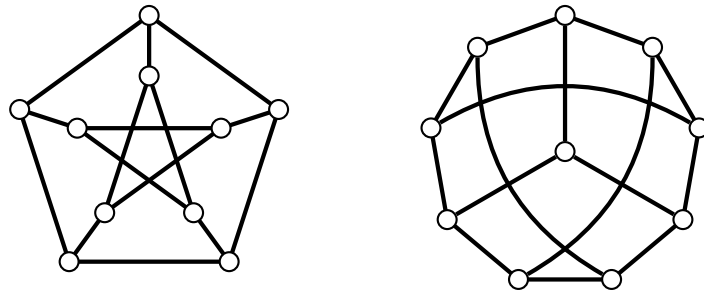
1.4 Complete bipartite



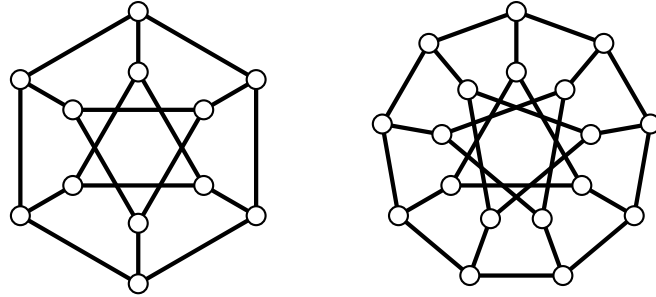
1.5 Stars



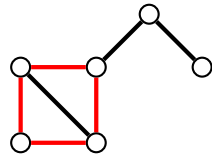
1.6 Petersen



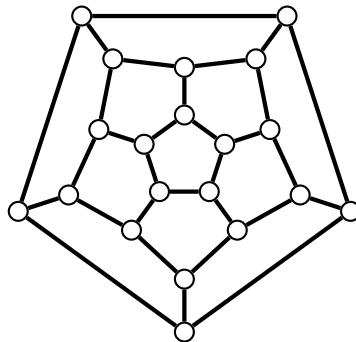
1.7 Generalised Petersen



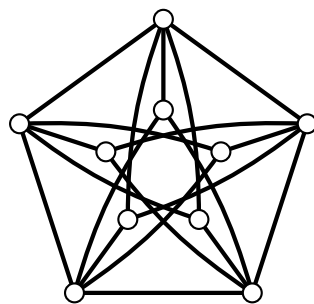
1.8 Small graph



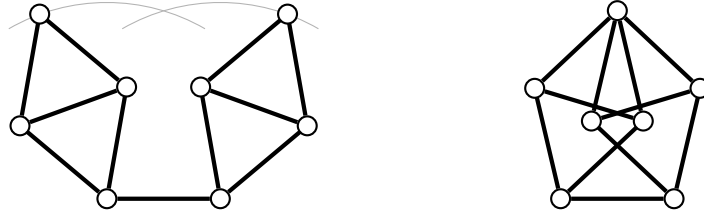
1.9 Dodecahedron



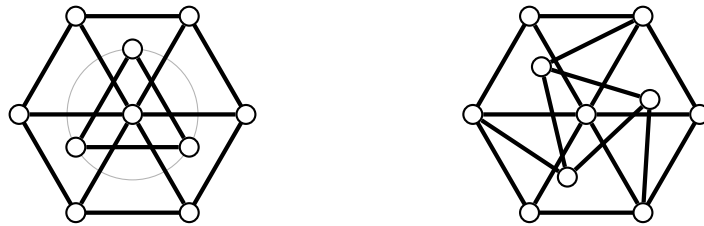
1.10 Yohann's graph $\overline{L(W_5)}$



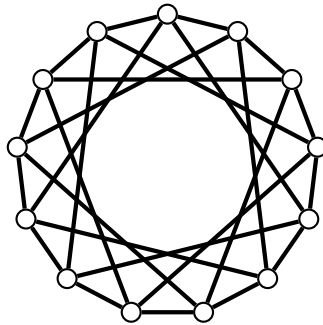
1.11 Moser spindle



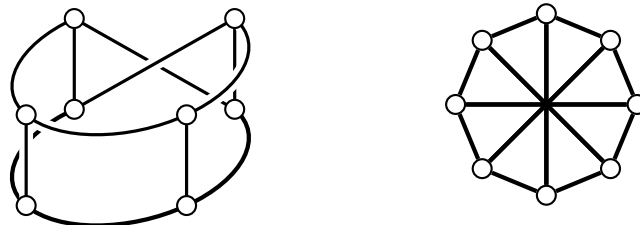
1.12 Golomb graph



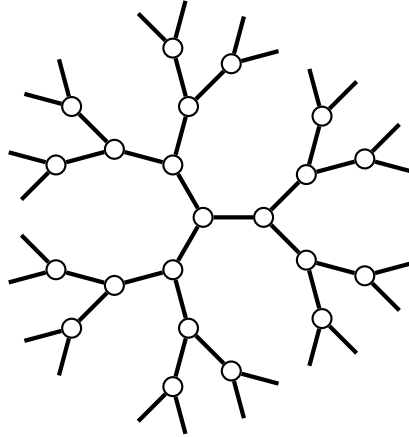
1.13 Antiwebs



1.14 Möbius ladders



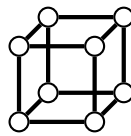
1.15 Binary tree



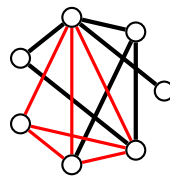
1.16 Matchings



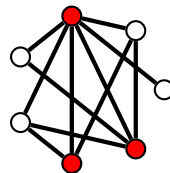
1.17 3-dim cube



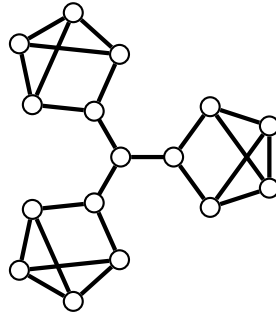
1.18 A 4-clique



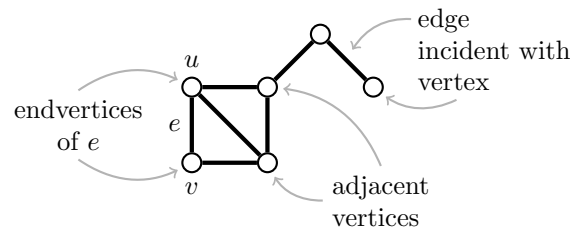
1.19 A vertex cover



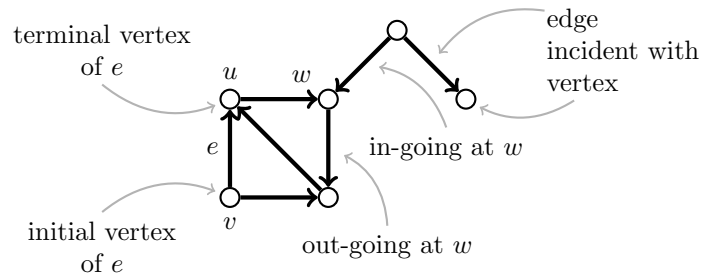
1.20 Cubic but no perfect matching



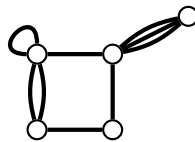
1.21 Small graph with basic defs



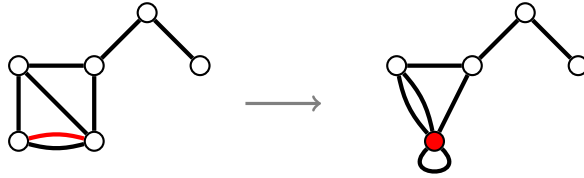
1.22 Small digraph with basic defs



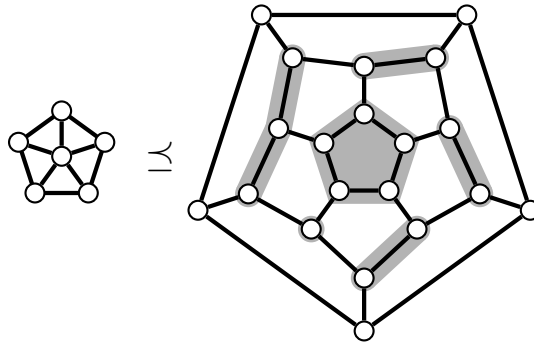
1.23 A small multigraph



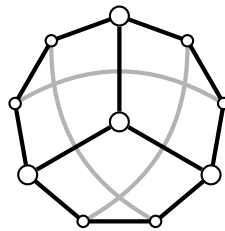
1.24 Edge contraction in a multigraph



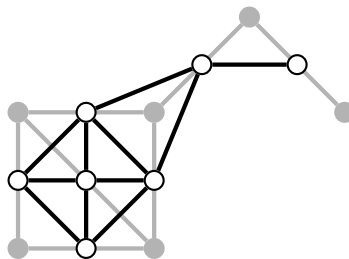
1.25 5-wheel as minor in dodecahedron



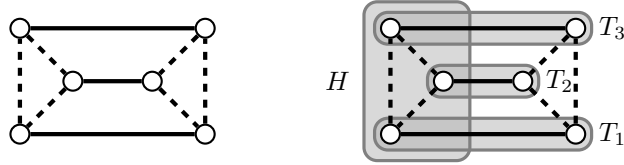
1.26 K_4 -subdivision in Petersen



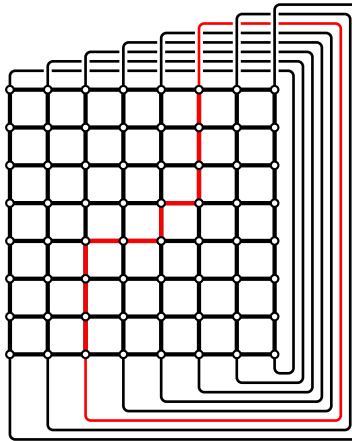
1.27 Line graph



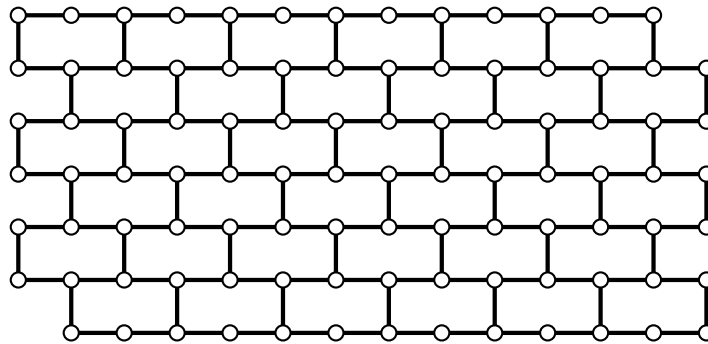
1.28 Comb inequality for TSP



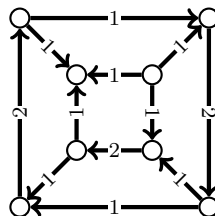
1.29 Odd cycles and Erdős-Pósa



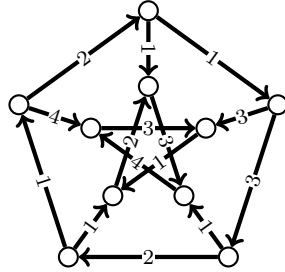
1.30 Walls



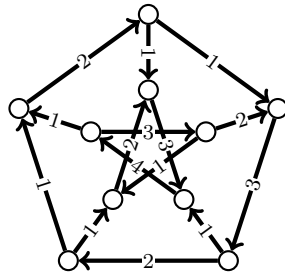
1.31 Nowhere-zero \mathbb{Z}_3 -flow in the cube



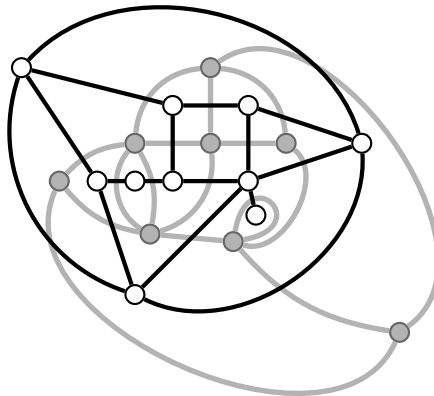
1.32 Nowhere-zero \mathbb{Z}_5 -flow in the Petersen graph



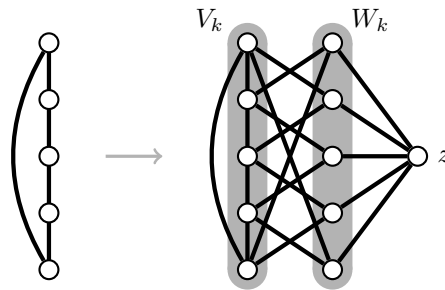
1.33 Nowhere-zero 5-flow in the Petersen graph



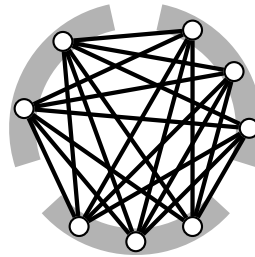
1.34 Duals graphs



1.35 Mycielski's construction

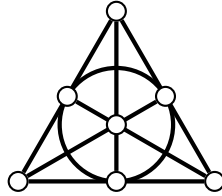


1.36 Turán graph

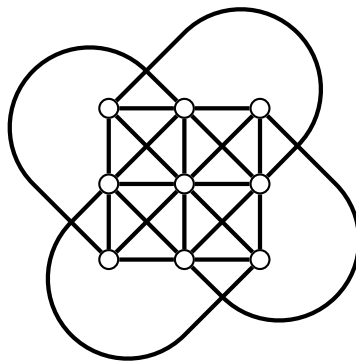


2 Geometry

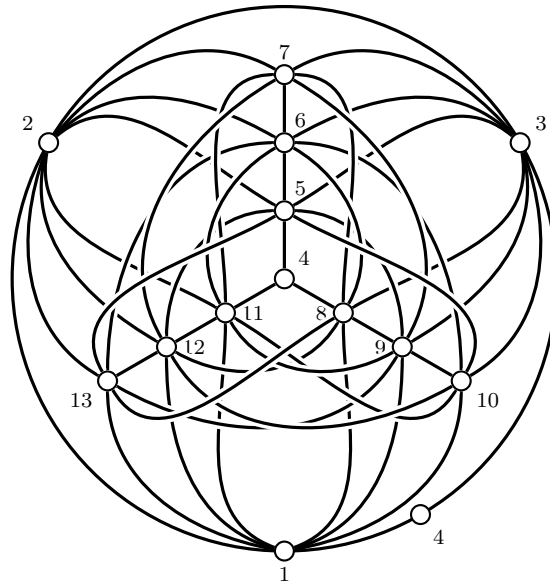
2.1 Fano plane



2.2 Affine plane



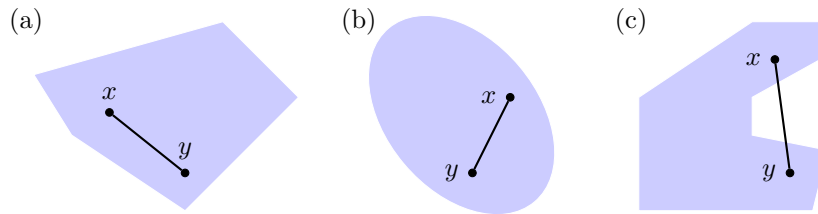
2.3 Projective plane on 13 lines



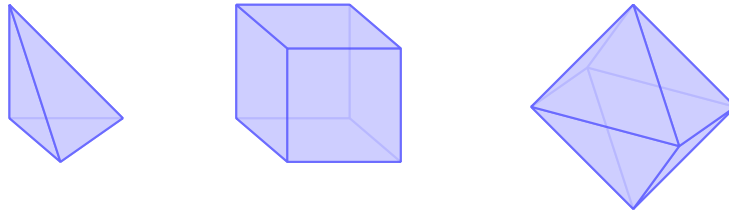
Note: Point 4 appears twice—otherwise line $\{1, 2, 3, 4\}$ becomes hard to draw.

3 Polyhedra

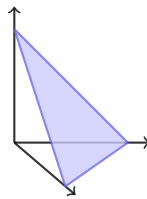
3.1 Convex sets



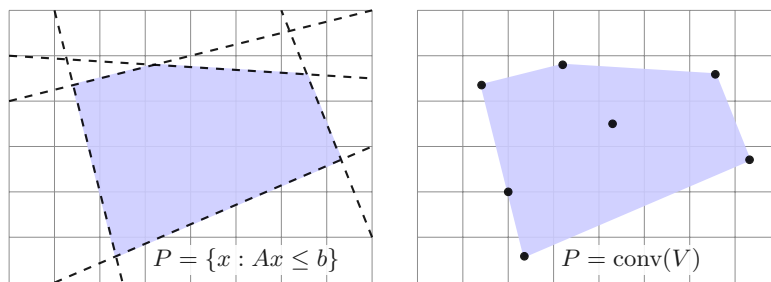
3.2 Simplex, cube, octahedron



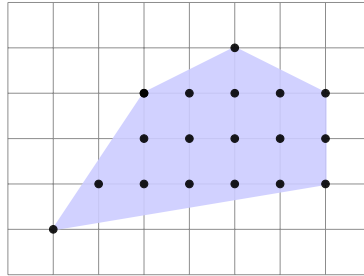
3.3 2-dim simplex



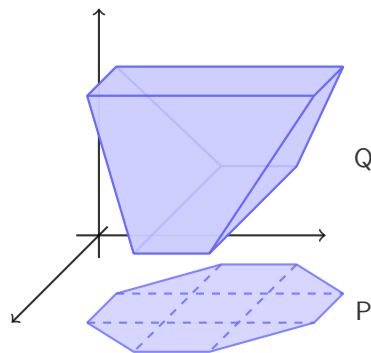
3.4 Constraints vs convex hull



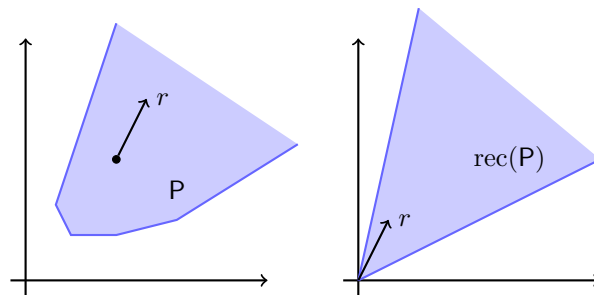
3.5 Integral polytope



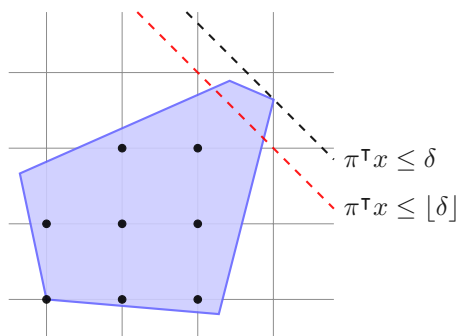
3.6 Projection



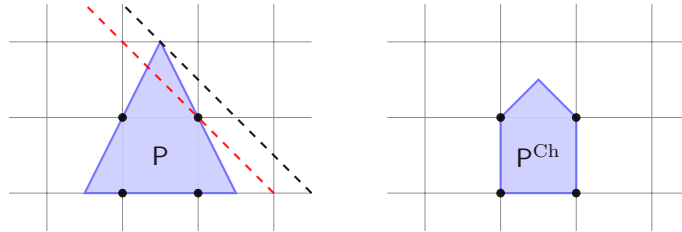
3.7 Recession cone



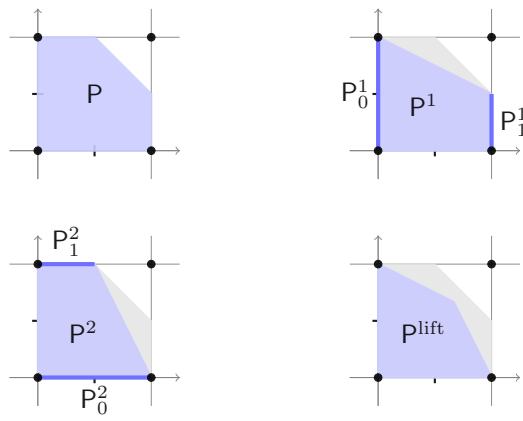
3.8 Chvátal inequality



3.9 Chvátal rank 2

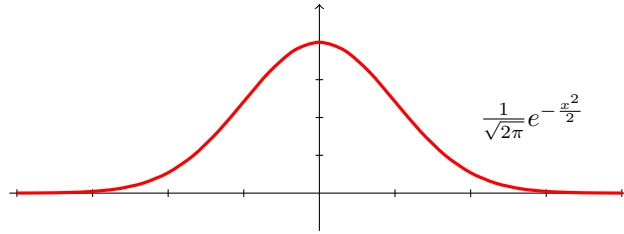


3.10 Lift-and-project



4 Functions

4.1 Standard normal distribution



5 Misc

5.1 Congruences

