

MATH 672
WORKSHEET
Fall 2018

1 Polytopes

For each of the following polytopes:

1. Describe the normal fan.
2. Describe the affine toric varieties ($:=$ affine charts) corresponding to the maximal dimensional cones of the normal fan. Try and recognize such toric varieties.
3. Write the transition functions that relate affine charts (corresponding to maximal dimensional cones that share a face).
4. Describe the torus orbits that you see in each chart and identify them when they appear in more than one chart.
5. Try and recognize the projective toric variety described by the affine charts and transition functions you computed (You may not recognize all of them, but you should be able to recognize some).

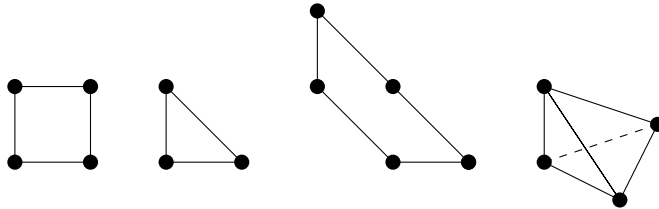


Figure 1: Polytopes

2 Fans

For each of the following fans:

1. Describe the affine toric varieties ($:=$ affine charts) corresponding to the maximal dimensional cones of the normal fan. Try and recognize such toric varieties.
2. Write the transition functions that relate affine charts (corresponding to maximal dimensional cones that share a face).
3. Describe the torus orbits that you see in each chart and identify them when they appear in more than one chart.

4. Try and recognize the toric variety described by the affine charts and transition functions you computed (You may not recognize all of them, but you should be able to recognize some).

