Ex. $k = 0$:   a point
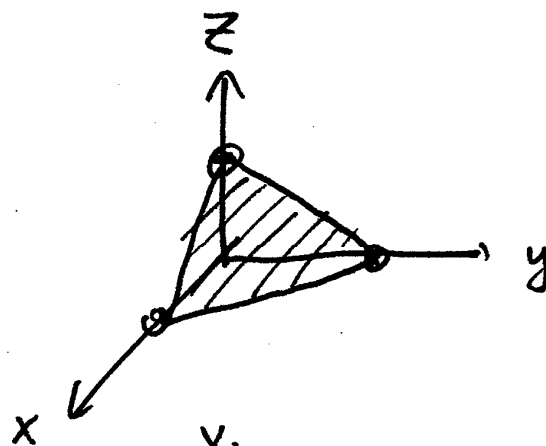
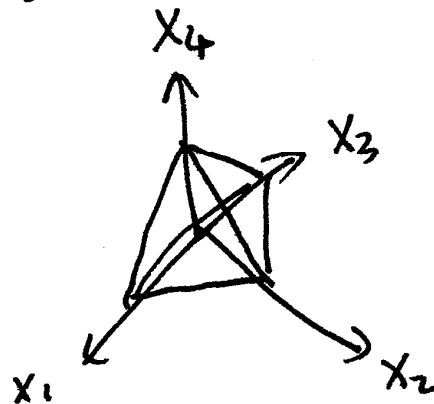$k = 1$:   a closed line segment connecting v_0, v_1.

$k = 2$:

is a triangle

$k = 3$:

pyramid
↓
is a ~~octa~~hedral
tetra
四面体.