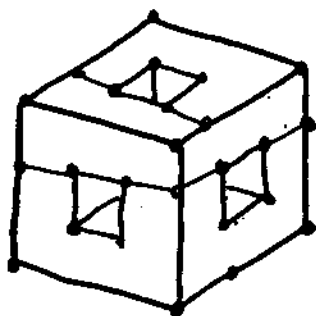
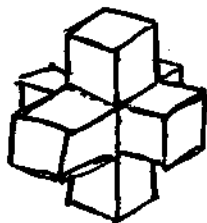


3) Consider the following subdivision:



outside



inside.

We get  $v = 48$   $e = 92$   $f = 36$

$$\text{So } \chi(X) = -8$$

Now the surface is orientable so  $X$  must be a connected sum of tori.

$$\text{i.e. } X = \underbrace{T^2 \# \dots \# T^2}_n$$

$$\Rightarrow \chi(X) = 2 - 2n$$

$$\Rightarrow 2 - 2n = -8$$

$$\Rightarrow n = 5$$

So  $X$  is the connected sum of 5 tori.