Figure 1
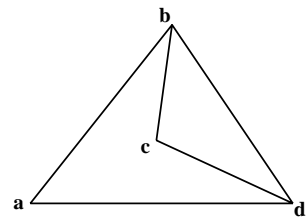

Figure 2
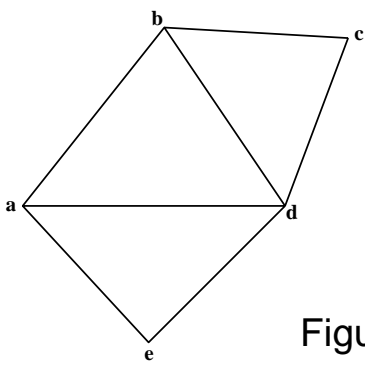

Figure 3
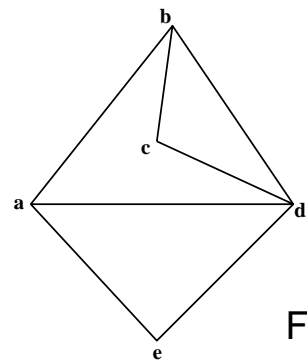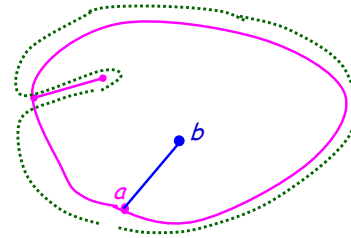

Figure 4

Adding an edge to an embedding

- Two constructor cases:
1) Attach edge from vertex on a face to a new vertex.
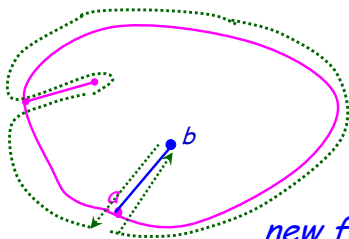2) Attach edge between vertices on a face.

Face Creation Rules
1) choose face: path $\bar{p}$ from a to a

add edge to *new vertex b*

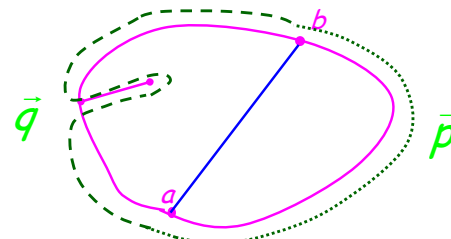Face Creation Rules
1) choose face = path $\vec{p}$ from a to a

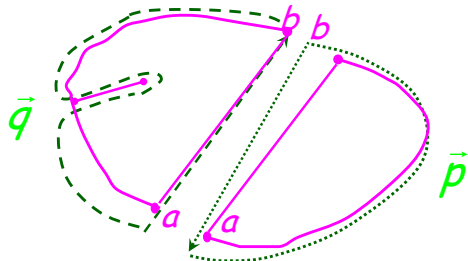add edge to *new vertex b*

new face:
$b\vec{p}b$

Face Creation Rules
2) choose face = path $a\vec{p}b\vec{q}a$

add edge across it

Face Creation Rules
2) choose face = path $a\vec{p}b\vec{q}a$

splits into 2 faces: $a\vec{p}ba, ab\vec{q}a$