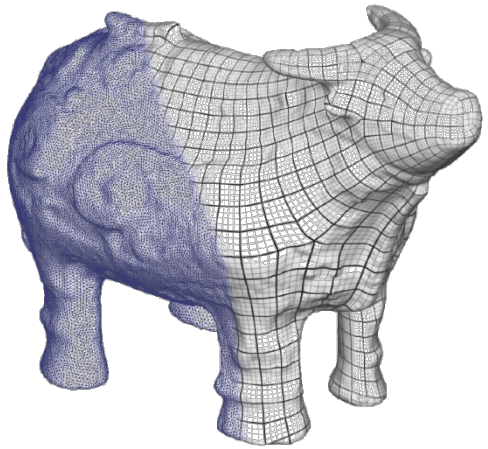
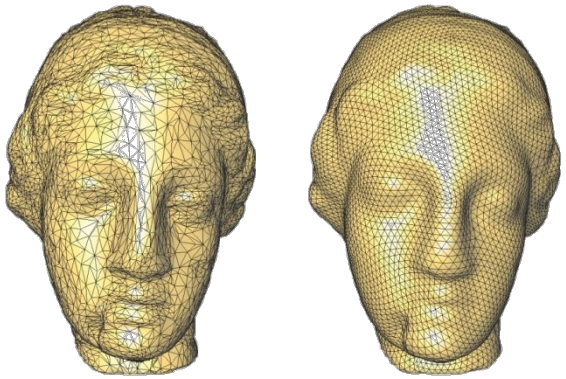
CS348a: Computer Graphics -- Geometric Modeling and Processing





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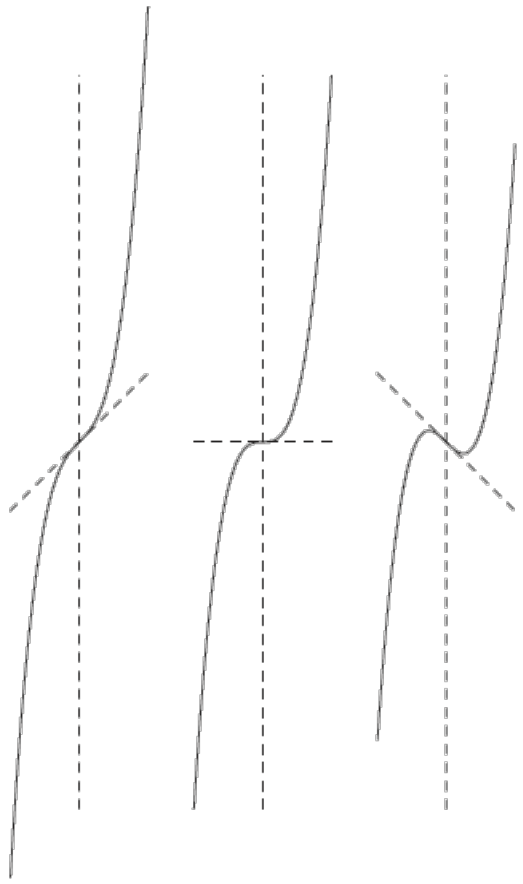
Classification of Cubics

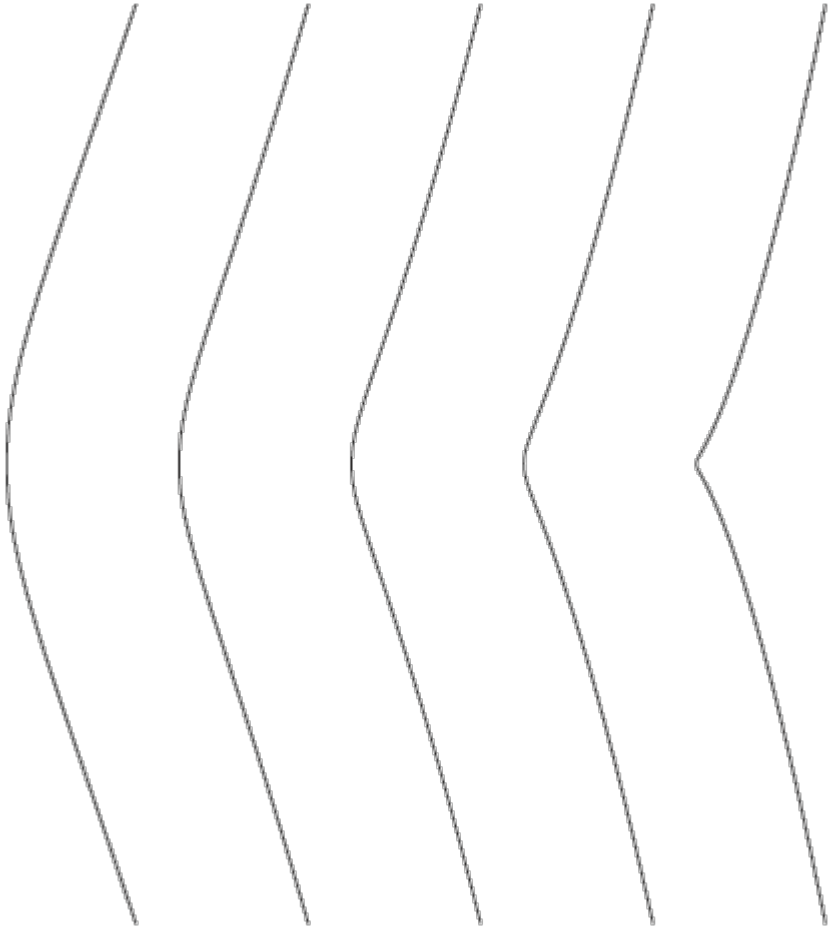
- Standard humpy: $H(r) := \langle r^2, r^3+r \rangle$
- Standard loopy: $L(r) := \langle r^2, r^3-r \rangle$
- Standard pointy: $P(r) := \langle r^2, r^3 \rangle$
- Standard S-shaped: $S(r) := \langle r, r^3 \rangle$
- Standard parabola: $Q(r) := \langle r, r^2 \rangle$
- Standard line: $A(r) := \langle r, r \rangle$

Every planar cubic is affinely equivalent to one of the above

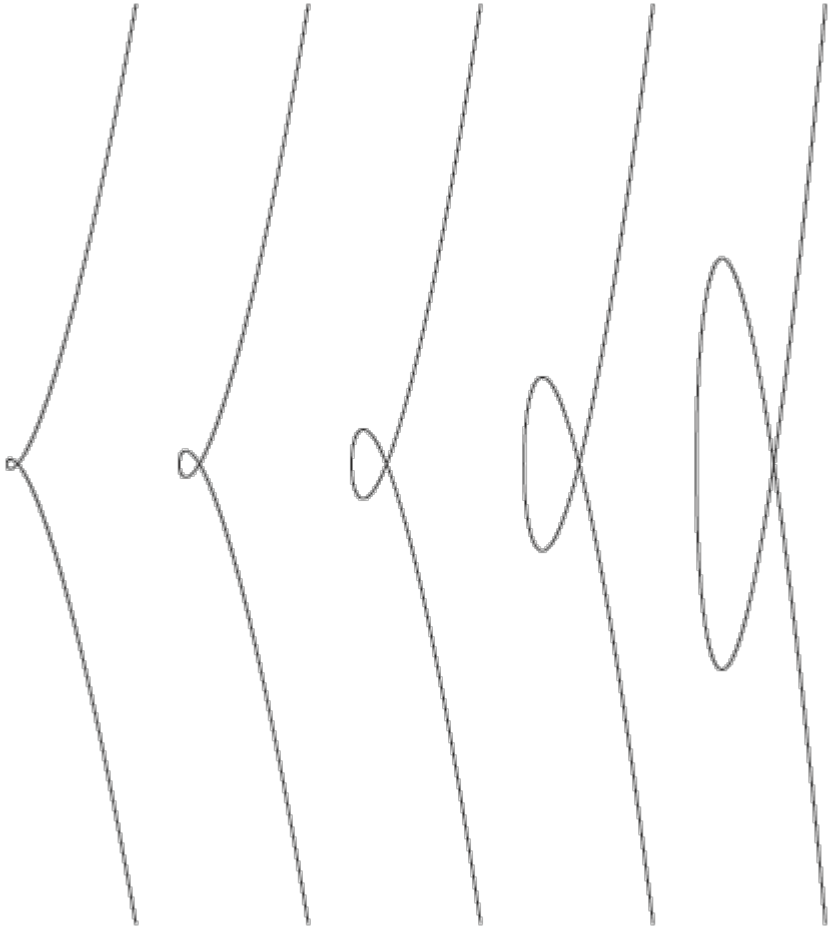
S-shaped Cubics



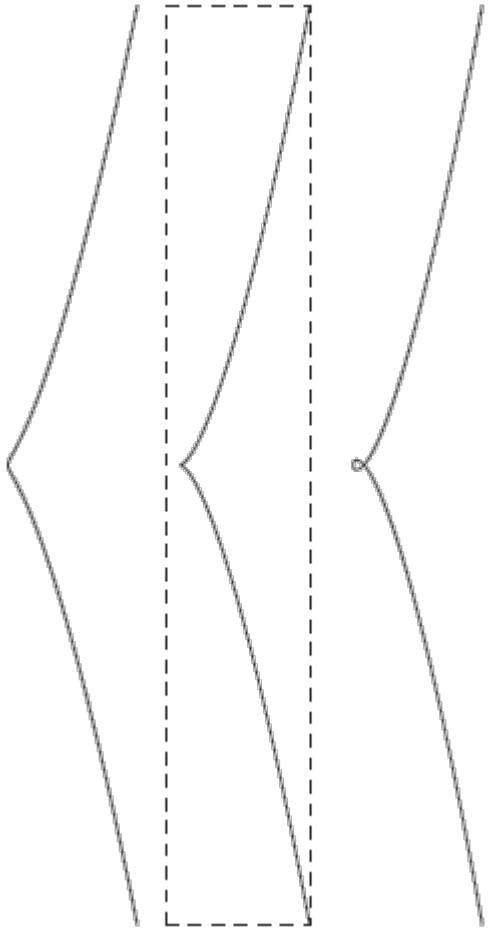
Humpy Cubics



Loopy Cubics



Humpy to Loopy though Pointy



Humpy to Humpy through S-shaped