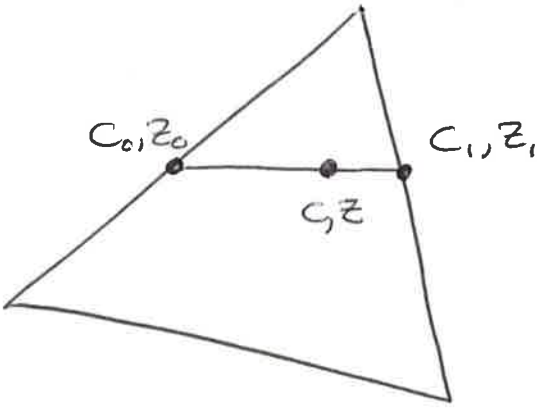

1. We want to interpolate vertex attribut c in the same way as z

$$\Rightarrow \quad \frac{z - z_0}{z_1 - z_0} = \frac{c - c_0}{c_1 - c_0} \quad (*)$$

from previous we know

$$z = \frac{1}{\frac{1}{z_0}(1-q) + \frac{1}{z_1}q} = \frac{z_1 z_0}{z_1(1-q) + z_0 q}$$

$$(*) \quad \frac{z - z_0}{z_1 - z_0} = \frac{\frac{1}{\frac{1}{z_0}(1-q) + \frac{1}{z_1}q} - z_0}{z_1 - z_0} = \frac{\frac{z_1 \cdot z_0}{z_1(1-q) + z_0 q} - z_0}{z_1 - z_0} =$$

$$= \frac{\left(\frac{z_1 z_0 - z_1 z_0 (1-q) + z_0^2 q}{z_1(1-q) + z_0 q}\right)}{z_1 - z_0} = \frac{\left(\frac{z_0 q (z_1 - z_0)}{z_1(1-q) + z_0 q}\right)}{z_1 - z_0} =$$

$$= \frac{z_0 q}{z_1(1-q) + z_0 q} = \frac{z_0 q}{q(z_0 - z_1) + z_1}$$

*

$$\frac{z_0 q}{z_1(1-q)+z_0 q} = \frac{c-c_0}{c_1-c_0}$$

We want to interpolate c => solve for c.

$$c = \frac{z_0 q(c_1-c_0)}{z_1(1-q)+z_0 q} + c_0 = \frac{z_0 q(c_1-c_0)+c_0(z_1(1-q)+z_0 q)}{z_1(1-q)+z_0 q} =$$

$$= \frac{A}{B}$$

$$A = z_0 q(c_1-\cancel{c_0}) + c_0(z_1(1-q)+\cancel{z_0 q}) =$$

$$= z_0 q c_1 + c_0 z_1(1-q)$$

$$\Rightarrow c = \frac{c_0 z_1(1-q)+c_1 z_0 q}{z_1(1-q)+z_0 q}$$

We can use this formula to interpolate!

However we usually know z

$$\Rightarrow c = \frac{c_0 z_1(1-q)+c_1 z_0 q}{z_1(1-q)+z_0 q} = \left\{\text{write in terms of } z\right\} =$$

$$= \left\{ z = \frac{1}{\frac{1}{z_0}(1-q)+\frac{1}{z_1}q} \quad \text{Just want to "flip" } z_1 \text{ \& } z_0 \text{ in denominator} \right\} =$$

$$= \frac{\frac{1}{z_1 z_0}(c_0 z_1(1-q)+c_1 z_0 q)}{\frac{1}{z_1 z_0}(z_1(1-q)+z_0 q)} = \frac{\frac{c_0}{z_0}(1-q)+\frac{c_1}{z_1}q}{\underbrace{\frac{1}{z_0}(1-q)+\frac{1}{z_1}q}_{\frac{1}{z}}} =$$

$$= z \cdot \left[\frac{c_0}{z_0}(1-q)+\frac{c_1}{z_1}q\right]$$