



- Say

$$(a, b) \sim (a', b') \wedge (c, d) \sim (c', d'),$$

then we need to show that

$$(ad + bc, bd) \sim (a'd' + b'c', b'd'). \quad (2)$$

- But check:

$$\begin{aligned} (ad + bc)(b'd') &\stackrel{?}{=} (a'd' + b'c')(bd) \\ ab'dd' + bb'cd' &\stackrel{?}{=} a'bdd' + bb'c'd. \end{aligned}$$