

L spin fact

$$s \mid x \star t \mid y = st + xy^\# \mid sy + tx$$

$$t \mid y^2 = t^2 + yy^\# \mid 2ty$$

$$\text{right mult } \star \underbrace{t \mid y} = \frac{t \mid y}{y^\# \mid tI}$$

$$s \mid x \frac{t \mid y}{y^\# \mid t} = st + xy^\# \mid sy + tx$$

$$\star \underbrace{t \mid y^2} = \star \underbrace{t^2 + yy^\# \mid 2ty} = \frac{t^2 + yy^\# \mid 2ty}{2ty^\# \mid \underbrace{t^2 + yy^\#}I}$$

$$\underbrace{\star t \mid y} \star \underbrace{\star t \mid y^2} = 0$$

$$\underbrace{\star t \mid y} \underbrace{\star t \mid y^2} = \frac{t \mid y}{y^\# \mid t} \frac{t^2 + yy^\# \mid 2ty}{2ty^\# \mid t^2 + yy^\#}$$

$$\underbrace{\star t \mid y^2} \underbrace{\star t \mid y} = \frac{t^2 + yy^\# \mid 2ty}{2ty^\# \mid t^2 + yy^\#} \frac{t \mid y}{y^\# \mid t}$$