

**Column@ {lhs = {v<sub>1</sub>, v<sub>2</sub>, v<sub>3</sub>} // G<sub>1,3</sub> // G<sub>2,3</sub>,**

**rhs = {v<sub>1</sub>, v<sub>2</sub>, v<sub>3</sub>} // G<sub>2,3</sub> // G<sub>1,3</sub>,**

**lhs - rhs // Expand}**

{v<sub>1</sub>, v<sub>2</sub>, (1 - t<sub>1</sub>) v<sub>1</sub> + t<sub>1</sub> ((1 - t<sub>2</sub>) v<sub>2</sub> + t<sub>2</sub> v<sub>3</sub>) }

{v<sub>1</sub>, v<sub>2</sub>, (1 - t<sub>2</sub>) v<sub>2</sub> + t<sub>2</sub> ((1 - t<sub>1</sub>) v<sub>1</sub> + t<sub>1</sub> v<sub>3</sub>) }

{0, 0, v<sub>1</sub> - t<sub>1</sub> v<sub>1</sub> - t<sub>2</sub> v<sub>1</sub> + t<sub>1</sub> t<sub>2</sub> v<sub>1</sub> - v<sub>2</sub> + t<sub>1</sub> v<sub>2</sub> + t<sub>2</sub> v<sub>2</sub> - t<sub>1</sub> t<sub>2</sub> v<sub>2</sub> }