

1. **factorial**(0, 1).

2. **factorial**(N, N\*Z) :-

**U is N-1,**

**factorial**(U, Z).

[2] ?- **factorial**(3, W). {3/N<sub>1</sub>, 3\*Z<sub>1</sub>/W}

[ ] ?- **U<sub>1</sub> is 3-1, factorial**(U<sub>1</sub>, Z<sub>1</sub>). {2/U<sub>1</sub>}

[2] ?- **factorial**(2, Z<sub>1</sub>). {2/N<sub>2</sub>, 2\*Z<sub>2</sub>/Z<sub>1</sub>}

[ ] ?- **U<sub>2</sub> is 2-1, factorial**(U<sub>2</sub>, Z<sub>2</sub>). {1/U<sub>2</sub>}

[2] ?- **factorial**(1, Z<sub>2</sub>). {1/N<sub>3</sub>, 1\*Z<sub>3</sub>/Z<sub>2</sub>}

[ ] ?- **U<sub>3</sub> is 1-1, factorial**(U<sub>3</sub>, Z<sub>3</sub>). {0/U<sub>3</sub>}

[1] ?- **factorial**(0, Z<sub>3</sub>). {1/Z<sub>3</sub>}

?- empty goal list - SUCCESS

$$W = 3 * Z_1 \quad Z_1 = 2 * Z_2 \quad Z_2 = 1 * Z_3$$

so  $W = 3 * (2 * (1 * 1)) = 6$