

Matrix Multiplication — v3.2 (regenerated)

Source: /mnt/data/Main.java Generated: 2025-11-15 13:44:18Z

Test #1 (source L51)

```
{ {{1},{5}},{{9,88}}}
```

Executed lists:

```
[[[1],[5]]; [[9, 88]]]
```

Step 1: A(2, 1) x B(1, 2)

My-code result: [[9, 88], [45, 440]]

Expected (strict): [[9, 88], [45, 440]]

Test #2 (source L54)

```
{  {{1,2,3},{4,5,6}}}
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]]
```

No multiplication steps.

Test #3 (source L57)

```
{  {{1,2,3},{4,5,6}},  {{7,8},{9,10},{11,12}},  { {13,14}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[7, 8],[9, 10],[11, 12]]; [[13, 14],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[58, 64], [139, 154]]

Expected (strict): [[58, 64], [139, 154]]

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1714, 1836], [4117, 4410]]

Expected (strict): [[1714, 1836], [4117, 4410]]

Test #4 (source L60)

```
{ {{1,2,3,5,6},{4,5,6}}, {{7,8},{9,10},{11,12}}, { {13,14}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3, 5, 6],[4, 5, 6]]; [[7, 8],[9, 10],[11, 12]]; [[13, 14],[15, 16]]]
```

Step 1: A(2, 5) × B(3, 2)

My-code result: [[58, 64], [139, 154]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=5 rowsB=3)

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1714, 1836], [4117, 4410]]

Expected (strict): [[1714, 1836], [4117, 4410]]

Test #5 (source L63)

```
{ {{1,2,3,4}}, {{5},{6},{7},{8}}}
```

Executed lists:

```
[[[1, 2, 3, 4]]; [[5],[6],[7],[8]]]
```

Step 1: A(1, 4) × B(4, 1)

My-code result: `[[70]]`

Expected (strict): `[[70]]`

Test #6 (source L66)

```
{  {{1, 2}, {3, 4}}, {{5, 6}, {7, 8}}, {{9, 10}, {11, 12}} }
```

Executed lists:

```
[[[1, 2],[3, 4]]; [[5, 6],[7, 8]]; [[9, 10],[11, 12]]]
```

Step 1: A(2, 2) × B(2, 2)

My-code result: [[19, 22], [43, 50]]

Expected (strict): [[19, 22], [43, 50]]

Step 2: A(2, 2) × B(2, 2)

My-code result: [[413, 454], [937, 1030]]

Expected (strict): [[413, 454], [937, 1030]]

Test #7 (source L69)

```
{  {{1,2,3},{4,5,6}},  {{7,8},{10},{11,12}},  { {13,14}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[7, 8],[10],[11, 12]]; [[13, 14],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[60, 44], [144, 104]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1440, 1544], [3432, 3680]]

Expected (strict): [[1440, 1544], [3432, 3680]]

Test #8 (source L73)

```
{ {{1,2,3},{4,5,6}}, {{7,8,999},{10,11},{11,12}}, { {13,14}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[7, 8, 999],[10, 11],[11, 12]]; [[13, 14],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 3)

My-code result: [[60, 66, 999], [144, 159, 3996]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Step 2: A(2, 3) × B(2, 2)

My-code result: [[1770, 1896], [4257, 4560]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=3 rowsB=2)

Test #9 (source L76)

```
{  {{1,2,3},{4,5}},  {{7,8},{10,11},{11,12}},  { {13,14,17}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5]]; [[7, 8],[10, 11],[11, 12]]; [[13, 14, 17],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[60, 66], [78, 87]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Step 2: A(2, 2) × B(2, 3)

My-code result: [[1770, 1896, 1020], [2319, 2484, 1326]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Test #10 (source L79)

```
{  {{1,2},{4,5,6}},  {{7,8},{10,11},{11,12}},  { {13,14,17}, {15,16,17} } }
```

Executed lists:

```
[[[1, 2],[4, 5, 6]]; [[7, 8],[10, 11],[11, 12]]; [[13, 14, 17],[15, 16, 17]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[27, 30], [144, 159]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Step 2: A(2, 2) × B(2, 3)

My-code result: [[801, 858, 969], [4257, 4560, 5151]]

Expected (strict): [[801, 858, 969], [4257, 4560, 5151]]

Test #11 (source L83)

```
{  {},{4,5,6}},  {{7,8,6},{10,14},{11,12}},  { {13}, {15,16} } }
```

Executed lists:

```
[[[]],[4, 5, 6]]; [[7, 8, 6],[10, 14],[11, 12]]; [[13],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 3)

My-code result: [[None, None, None], [144, 174, 24]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Step 2: A(2, 3) × B(2, 2)

My-code result: [[None, None], [4482, 2784]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=3 rowsB=2)

Test #12 (source L86)

```
{ {{1,2},{3,4},{5,6}}, {{7,8},{10,14},{0}}, { {13}, {15,16} } }
```

Executed lists:

```
[[[1, 2],[3, 4],[5, 6]]; [[7, 8],[10, 14],[0]]; [[13],[15, 16]]]
```

Step 1: A(3, 2) × B(3, 2)

My-code result: [[27, 36], [61, 80], [95, 124]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=2 rowsB=3)

Step 2: A(3, 2) × B(2, 2)

My-code result: [[891, 576], [1993, 1280], [3095, 1984]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Test #13 (source L89)

```
{ {{1,2,3},{4,5,6}}, {{7,8},{9,10},{11,12}}, { {0}, {16,17},{5}} }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[7, 8],[9, 10],[11, 12]]; [[0],[16, 17],[5]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[58, 64], [139, 154]]

Expected (strict): [[58, 64], [139, 154]]

Step 2: A(2, 2) × B(3, 2)

My-code result: [[1024, 1088], [2464, 2618]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=2 rowsB=3)

Test #14 (source L91)

```
{  {{1,2,3},{4,5,6}},  {{7,8},{9,10},{11}},  { {13,14}, {16,17} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[7, 8],[9, 10],[11]]; [[13, 14],[16, 17]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[58, 28], [139, 82]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1202, 1288], [3119, 3340]]

Expected (strict): [[1202, 1288], [3119, 3340]]

Test #15 (source L94)

```
{ {{1,2,3},{4,5,6}}, {{7,8},{9,2},{11,12}}, { {13,14}, {16,87},{3,4} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[7, 8],[9, 2],[11, 12]]; [[13, 14],[16, 87],[3, 4]]]
```

Step 1: A(2, 3) x B(3, 2)

My-code result: [[58, 48], [139, 114]]

Expected (strict): [[58, 48], [139, 114]]

Step 2: A(2, 2) x B(3, 2)

My-code result: [[1522, 4988], [3631, 11864]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=2 rowsB=3)

Test #16 (source L97)

```
{  {{1,2,3},{4,5,6}},  {{},{10,14},{11,12}},  { {13}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[],[10, 14],[11, 12]]; [[13],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[53, 64], [116, 142]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1649, 1024], [3638, 2272]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Test #17 (source L100)

```
{  {{1,2,3},{4,5,6}},  {{1,7},{25,14},{}},  { {13,15}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[1, 7],[25, 14],[]]; [[13, 15],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[51, 35], [129, 98]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1188, 1325], [3147, 3503]]

Expected (strict): [[1188, 1325], [3147, 3503]]

Test #18 (source L104)

```
{ {{1,2,3},{}}, {{1,7},{25,14},{4,8}}, { {13,15}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[ ]]; [[1, 7],[25, 14],[4, 8]]; [[13, 15],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[63, 59], [None, None]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1704, 1889], [None, None]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Test #19 (source L107)

```
{  {{1,2,3},{4,5,6}},  {{1,7},{25,14},{4,8}},  { {}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[1, 7],[25, 14],[4, 8]]; [[],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[63, 59], [153, 146]]

Expected (strict): [[63, 59], [153, 146]]

Step 2: A(2, 2) × B(2, 2)

My-code result: [[885, 944], [2190, 2336]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Test #20 (source L110)

```
{  {{1,2,3},{4,5,6}},  {{1,7},{25,14},{4,8}},  { {34,45}, {} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[1, 7],[25, 14],[4, 8]]; [[34, 45],[]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[63, 59], [153, 146]]

Expected (strict): [[63, 59], [153, 146]]

Step 2: A(2, 2) × B(2, 2)

My-code result: [[2142, 2835], [5202, 6885]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Test #21 (source L113)

```
{ { {1,2,3},{4,5,6}}, { {7,8,6},{10,14},{11,12}}, { {13,14}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[7, 8, 6],[10, 14],[11, 12]]; [[13, 14],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 3)

My-code result: [[60, 72, 6], [144, 174, 24]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Step 2: A(2, 3) × B(2, 2)

My-code result: [[1860, 1992], [4482, 4800]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=3 rowsB=2)

Test #22 (source L117)

```
{  {{1,2,3},{4,5,6,9}},  {{7,8},{9,10},{11,12}},  { {13,14}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6, 9]]; [[7, 8],[9, 10],[11, 12]]; [[13, 14],[15, 16]]]
```

Step 1: A(2, 4) × B(3, 2)

My-code result: [[58, 64], [139, 154]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=4 rowsB=3)

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1714, 1836], [4117, 4410]]

Expected (strict): [[1714, 1836], [4117, 4410]]

Test #23 (source L120)

```
{  {{1,2,3},{4}},  {{7,8},{9,10},{11,12}},  { {13,14}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4]]; [[7, 8],[9, 10],[11, 12]]; [[13, 14],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[58, 64], [28, 32]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1714, 1836], [844, 904]]

Expected (strict): [[1714, 1836], [844, 904]]

Test #24 (source L124)

```
{ { {1,2,3},{4,7,2,6}}, { {7,8},{9,10},{11,12}}, { {13,14}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 7, 2, 6]]; [[7, 8],[9, 10],[11, 12]]; [[13, 14],[15, 16]]]
```

Step 1: A(2, 4) × B(3, 2)

My-code result: [[58, 64], [113, 126]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=4 rowsB=3)

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1714, 1836], [3359, 3598]]

Expected (strict): [[1714, 1836], [3359, 3598]]

Test #25 (source L127)

```
{  {{1,2,3},{4,5,6}},  {{},{10,14},{11,12}},  { {13,14}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[],[10, 14],[11, 12]]; [[13, 14],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[53, 64], [116, 142]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1649, 1766], [3638, 3896]]

Expected (strict): [[1649, 1766], [3638, 3896]]

Test #26 (source L129)

```
{  {{1,2,3},{4,5,6}},  {{11,14},{},{19,12}},  { {13,14}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[11, 14],[],[19, 12]]; [[13, 14],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[68, 50], [158, 128]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1634, 1752], [3974, 4260]]

Expected (strict): [[1634, 1752], [3974, 4260]]

Test #27 (source L130)

```
{  {{1,2,3},{4,5,6}},  {{11,14},{44,55},{19,12}},  { {13,14}, {} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[11, 14],[44, 55],[19, 12]]; [[13, 14],[ ]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[156, 160], [378, 403]]

Expected (strict): [[156, 160], [378, 403]]

Step 2: A(2, 2) × B(2, 2)

My-code result: [[2028, 2184], [4914, 5292]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Test #28 (source L132)

```
{ { {1,2,3},{4,5,6}}, { {11,14},{44,55},{19,12}}, { {13,14}, {0} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[11, 14],[44, 55],[19, 12]]; [[13, 14],[0]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[156, 160], [378, 403]]

Expected (strict): [[156, 160], [378, 403]]

Step 2: A(2, 2) × B(2, 2)

My-code result: [[2028, 2184], [4914, 5292]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Test #29 (source L134)

```
{ { {1,2,3},{4,5,6}}, { {11,14},{44,55},{19,12}}, { {13,14}, {0,5},{0} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[11, 14],[44, 55],[19, 12]]; [[13, 14],[0, 5],[0]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[156, 160], [378, 403]]

Expected (strict): [[156, 160], [378, 403]]

Step 2: A(2, 2) × B(3, 2)

My-code result: [[2028, 2984], [4914, 7307]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=2 rowsB=3)

Test #30 (source L137)

```
{  {{1,2,3},{4,5,6}},  {{7,8},{10,14},{11,12}},  { {13}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[7, 8],[10, 14],[11, 12]]; [[13],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[60, 72], [144, 174]]

Expected (strict): [[60, 72], [144, 174]]

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1860, 1152], [4482, 2784]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Test #31 (source L141)

```
{  {{1,2,3},{4,5,6}},  {{11,14},{44,55},{19,12}},  { {13,14}, {0} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[11, 14],[44, 55],[19, 12]]; [[13, 14],[0]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[156, 160], [378, 403]]

Expected (strict): [[156, 160], [378, 403]]

Step 2: A(2, 2) × B(2, 2)

My-code result: [[2028, 2184], [4914, 5292]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Test #32 (source L143)

```
{ { {1,2,3},{4,5,6}}, { {7,8},{10,14},{15,12,65,55}}, { {13,99}, {15,16} } }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[7, 8],[10, 14],[15, 12, 65, 55]]; [[13, 99],[15, 16]]]
```

Step 1: A(2, 3) × B(3, 4)

My-code result: [[72, 72, 195, 165], [168, 174, 390, 330]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Step 2: A(2, 4) × B(2, 2)

My-code result: [[2016, 8280], [4794, 19416]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=4 rowsB=2)

Test #33 (source L145)

```
{  {{1,2,3},{4,5,6},{7,8,9}},  {{10,11,12},{13,14,15},{16,17,18}},  { {}, {22,23,24}} }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6],[7, 8, 9]]; [[10, 11, 12],[13, 14, 15],[16, 17, 18]]; [[],[22, 23, 24]]]
```

Step 1: A(3, 3) × B(3, 3)

My-code result: [[84, 90, 96], [201, 216, 231], [318, 342, 366]]

Expected (strict): [[84, 90, 96], [201, 216, 231], [318, 342, 366]]

Step 2: A(3, 3) × B(2, 3)

My-code result: [[1980, 2070, 2160], [4752, 4968, 5184], [7524, 7866, 8208]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=3 rowsB=2)

Test #34 (source L147)

```
{ {{1,2,3},{4,5,6}}, {{7,8},{9,10},{11,12}}, {{13,14}, {15,16} }, {{17,18}, {19,20} },{ {17,18}, {19,20} }}
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[7, 8],[9, 10],[11, 12]]; [[13, 14],[15, 16]]; [[17, 18],[19, 20]]; [[17, 18],[19, 20]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[58, 64], [139, 154]]

Expected (strict): [[58, 64], [139, 154]]

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1714, 1836], [4117, 4410]]

Expected (strict): [[1714, 1836], [4117, 4410]]

Step 3: A(2, 2) × B(2, 2)

My-code result: [[64022, 67572], [153779, 162306]]

Expected (strict): [[64022, 67572], [153779, 162306]]

Step 4: A(2, 2) × B(2, 2)

My-code result: [[2372242, 2503836], [5698057, 6014142]]

Expected (strict): [[2372242, 2503836], [5698057, 6014142]]

Test #35 (source L149)

```
{ { {1,2,3},{4,5,6}}, { {7,8},{9,10},{11,12}}, { {13,14}, {15,16}}, { {17,18}, {19,20},{99,18}, {19,20}}, { {21,22,23,24}, {25,26,27,28},{29,30,31,32}} }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6]]; [[7, 8],[9, 10],[11, 12]]; [[13, 14],[15, 16]]; [[17, 18],[19, 20],[99, 18],[19, 20]]; [[21, 22, 23, 24],[25, 26, 27, 28],[29, 30, 31,
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[58, 64], [139, 154]]

Expected (strict): [[58, 64], [139, 154]]

Step 2: A(2, 2) × B(2, 2)

My-code result: [[1714, 1836], [4117, 4410]]

Expected (strict): [[1714, 1836], [4117, 4410]]

Step 3: A(2, 2) × B(4, 2)

My-code result: [[64022, 67572], [153779, 162306]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=2 rowsB=4)

Step 4: A(2, 2) × B(3, 4)

My-code result: [[3033762, 3165356, 3296950, 3428544], [7287009, 7603094, 7919179, 8235264]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=2 rowsB=3)

Test #36 (source L151)

```
{ { {1,2,3},{4,5,6},{7,8,9}}, { {10,11,12},{13,14,15},{16,17,18}}, { {19,20,21}, {22,23,24}} }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6],[7, 8, 9]]; [[10, 11, 12],[13, 14, 15],[16, 17, 18]]; [[19, 20, 21],[22, 23, 24]]]
```

Step 1: A(3, 3) × B(3, 3)

My-code result: [[84, 90, 96], [201, 216, 231], [318, 342, 366]]

Expected (strict): [[84, 90, 96], [201, 216, 231], [318, 342, 366]]

Step 2: A(3, 3) × B(2, 3)

My-code result: [[3576, 3750, 3924], [8571, 8988, 9405], [13566, 14226, 14886]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=3 rowsB=2)

Test #37 (source L154)

```
{  {{1,2,3},{4,5,6},{7,8,9}},  {{11,12},{13,14,15},{16,17,18}} }
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6],[7, 8, 9]]; [[11, 12],[13, 14, 15],[16, 17, 18]]]
```

Step 1: A(3, 3) × B(3, 3)

My-code result: [[85, 91, 84], [205, 220, 183], [325, 349, 282]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Test #38 (source L156)

```
{  {{},{4,5,6},{7,8,9}},  {{10,11,12},{13,14,15},{16,17,18}} }
```

Executed lists:

```
[[[],[4, 5, 6],[7, 8, 9]]; [[10, 11, 12],[13, 14, 15],[16, 17, 18]]]
```

Step 1: A(3, 3) × B(3, 3)

My-code result: [[None, None, None], [201, 216, 231], [318, 342, 366]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Test #39 (source L159)

```
{{{1,2,3},{4,5,6},{7,8,9}},{9,8,7},{6,5,4},{3,2,1}}}
```

Executed lists:

```
[[[1, 2, 3],[4, 5, 6],[7, 8, 9]]; [[9, 8, 7],[6, 5, 4],[3, 2, 1]]]
```

Step 1: A(3, 3) × B(3, 3)

My-code result: [[30, 24, 18], [84, 69, 54], [138, 114, 90]]

Expected (strict): [[30, 24, 18], [84, 69, 54], [138, 114, 90]]

Test #40 (source L161)

```
{{{1},{2,3},{4,5,6}},{{6,7},{8,9},{10,11}}}
```

Executed lists:

```
[[[1],[2, 3],[4, 5, 6]]; [[6, 7],[8, 9],[10, 11]]]
```

Step 1: A(3, 3) × B(3, 2)

My-code result: [[6, 7], [36, 41], [124, 139]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Test #41 (source L163)

```
{{{1,2}},{{3},{4}},{{5,6}},{{7},{8}}}
```

Executed lists:

```
[[[1, 2]]; [[3],[4]]; [[5, 6]]; [[7],[8]]]
```

Step 1: A(1, 2) × B(2, 1)

My-code result: [[11]]

Expected (strict): [[11]]

Step 2: A(1, 1) × B(1, 2)

My-code result: [[55, 66]]

Expected (strict): [[55, 66]]

Step 3: A(1, 2) × B(2, 1)

My-code result: [[913]]

Expected (strict): [[913]]

Test #42 (source L165)

`{{{1,2,3,4}},{{5},{6},{7},{8}}}`

Executed lists:

`[[[1, 2, 3, 4]]; [[5],[6],[7],[8]]]`

Step 1: A(1, 4) × B(4, 1)

My-code result: `[[70]]`

Expected (strict): `[[70]]`

Test #43 (source L167)

```
{{{1,null,3},{4,5,null}},{7,8},{9,10},{11,12}}}
```

Executed lists:

```
[[[1, None, 3],[4, 5, None]]; [[7, 8],[9, 10],[11, 12]]]
```

Step 1: A(2, 3) x B(3, 2)

My-code result: [[40, 44], [73, 82]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Test #44 (source L169)

```
{{{}}},{{1,2},{3,4}}}
```

Executed lists:

```
[[[]]; [[1, 2],[3, 4]]]
```

Step 1: A(1, 0) x B(2, 2)

My-code result: `[[0, 0]]`

Expected (strict): Invalid/Discarded (Incompatible dims colsA=0 rowsB=2)

Test #45 (source L171)

`{{{1},{2},{3},{4}},{{1,2,3,4}}}`

Executed lists:

`[[[1],[2],[3],[4]]; [[1, 2, 3, 4]]]`

Step 1: A(4, 1) × B(1, 4)

My-code result: `[[1, 2, 3, 4], [2, 4, 6, 8], [3, 6, 9, 12], [4, 8, 12, 16]]`

Expected (strict): `[[1, 2, 3, 4], [2, 4, 6, 8], [3, 6, 9, 12], [4, 8, 12, 16]]`

Test #46 (source L173)

```
{{{1}}, {{2,3}}, {{4},{5},{6}}, {{7,8,9}}}
```

Executed lists:

```
[[[1]]; [[2, 3]]; [[4],[5],[6]]; [[7, 8, 9]]]
```

Step 1: A(1, 1) × B(1, 2)

My-code result: [[2, 3]]

Expected (strict): [[2, 3]]

Step 2: A(1, 2) × B(3, 1)

My-code result: [[23]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=2 rowsB=3)

Step 3: A(1, 1) × B(1, 3)

My-code result: [[161, 184, 207]]

Expected (strict): [[161, 184, 207]]

Test #47 (source L175)

```
{{{1,2},{3,4}},{{1,2},{3,4}},{{1,2},{3,4}}}
```

Executed lists:

```
[[[1, 2],[3, 4]]; [[1, 2],[3, 4]]; [[1, 2],[3, 4]]]
```

Step 1: A(2, 2) × B(2, 2)

My-code result: [[7, 10], [15, 22]]

Expected (strict): [[7, 10], [15, 22]]

Step 2: A(2, 2) × B(2, 2)

My-code result: [[37, 54], [81, 118]]

Expected (strict): [[37, 54], [81, 118]]

Test #48 (source L177)

```
{{{1,2,3,4,5}},{{6},{7},{8},{9},{10}}}
```

Executed lists:

```
[[[1, 2, 3, 4, 5]]; [[6],[7],[8],[9],[10]]]
```

Step 1: A(1, 5) × B(5, 1)

My-code result: `[[130]]`

Expected (strict): `[[130]]`

Test #49 (source L179)

```
{{{1,2},{3}},{{4,5,6}},{{7},{8,9}}}
```

Executed lists:

```
[[[1, 2],[3]]; [[4, 5, 6]]; [[7],[8, 9]]]
```

Step 1: A(2, 2) x B(1, 3)

My-code result: [[4, 5, 6], [12, 15, 18]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=2 rowsB=1)

Step 2: A(2, 3) x B(2, 2)

My-code result: [[68, 45], [204, 135]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=3 rowsB=2)

Test #50 (source L181)

`{{{1}}}, {{2}}, {{3}}, {{4}}, {{5}}}`

Executed lists:

`[[[1]]; [[2]]; [[3]]; [[4]]; [[5]]]`

Step 1: $A(1, 1) \times B(1, 1)$

My-code result: `[[2]]`

Expected (strict): `[[2]]`

Step 2: $A(1, 1) \times B(1, 1)$

My-code result: `[[6]]`

Expected (strict): `[[6]]`

Step 3: $A(1, 1) \times B(1, 1)$

My-code result: `[[24]]`

Expected (strict): `[[24]]`

Step 4: $A(1, 1) \times B(1, 1)$

My-code result: `[[120]]`

Expected (strict): `[[120]]`

Test #51 (source L183)

```
{{{}}, {1, 2}}, {{3}, {4, 5}}}
```

Executed lists:

```
[[[]], [1, 2]]; [[3], [4, 5]]
```

Step 1: $A(2, 2) \times B(2, 2)$

My-code result: `[[None, None], [11, 10]]`

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Test #52 (source L185)

```
{{{1,2,3,4,5},{1,2,3,4,5},{1,2,3,4,5}},{{1,2},{3,4},{5,6},{7,8},{9,10}}}
```

Executed lists:

```
[[[1, 2, 3, 4, 5],[1, 2, 3, 4, 5],[1, 2, 3, 4, 5]]; [[1, 2],[3, 4],[5, 6],[7, 8],[9, 10]]]
```

Step 1: A(3, 5) × B(5, 2)

My-code result: [[95, 110], [95, 110], [95, 110]]

Expected (strict): [[95, 110], [95, 110], [95, 110]]

Test #53 (source L187)

```
{{{1,2},{3}},{{4,5},{6,7},{8,9}}}
```

Executed lists:

```
[[[1, 2],[3]]; [[4, 5],[6, 7],[8, 9]]]
```

Step 1: A(2, 2) x B(3, 2)

My-code result: [[16, 19], [12, 15]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=2 rowsB=3)

Test #54 (source L189)

```
{{{1,2},{3,4}},{5,6,7},{8,9,10}}}
```

Executed lists:

```
[[[1, 2],[3, 4]]; [[5, 6, 7],[8, 9, 10]]]
```

Step 1: A(2, 2) × B(2, 3)

My-code result: [[21, 24, 27], [47, 54, 61]]

Expected (strict): [[21, 24, 27], [47, 54, 61]]

Test #55 (source L191)

```
{{{1,2}},{{}},{{3,4}}}
```

Executed lists:

```
[[[1, 2]]; [[]]; [[3, 4]]]
```

Step 1: $A(1, 2) \times B(1, 0)$

My-code result: `[[]]`

Expected (strict): Invalid/Discarded (Incompatible dims colsA=2 rowsB=1)

Step 2: $A(1, 0) \times B(1, 2)$

My-code result: `[[0, 0]]`

Expected (strict): Invalid/Discarded (Incompatible dims colsA=0 rowsB=1)

Test #56 (source L193)

```
{{{1,2,3},{4,5}},{{6},{7},{8}}}
```

Executed lists:

```
[[[1, 2, 3],[4, 5]]; [[6],[7],[8]]]
```

Step 1: A(2, 3) × B(3, 1)

My-code result: [[44], [59]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Test #57 (source L195)

```
{{{1,null,3,4},{5,6,null,8}},{{9,10},{11,12},{13,14},{15,16}}}
```

Executed lists:

```
[[[1, None, 3, 4],[5, 6, None, 8]]; [[9, 10],[11, 12],[13, 14],[15, 16]]]
```

Step 1: A(2, 4) × B(4, 2)

My-code result: [[108, 116], [231, 250]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Test #58 (source L197)

```
{{{1,2}},{{3,4,5}},{{6,7}}}
```

Executed lists:

```
[[[1, 2]]; [[3, 4, 5]]; [[6, 7]]]
```

Step 1: A(1, 2) × B(1, 3)

My-code result: [[3, 4, 5]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=2 rowsB=1)

Step 2: A(1, 3) × B(1, 2)

My-code result: [[18, 21]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=3 rowsB=1)

Test #59 (source L199)

```
{{{5}},{{6}},{{7}}}
```

Executed lists:

```
[[[5]]; [[6]]; [[7]]]
```

Step 1: $A(1, 1) \times B(1, 1)$

My-code result: $[[30]]$

Expected (strict): $[[30]]$

Step 2: $A(1, 1) \times B(1, 1)$

My-code result: $[[210]]$

Expected (strict): $[[210]]$

Test #60 (source L201)

```
{{{0,0,0},{null,0}},{0},{0},{0}}}
```

Executed lists:

```
[[[0, 0, 0],[None, 0]]; [[0],[0],[0]]]
```

Step 1: A(2, 3) x B(3, 1)

My-code result: [[0], [0]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Test #61 (source L203)

```
{{{1,2,3,4}},{{1},{null},{3},{4}}}
```

Executed lists:

```
[[[1, 2, 3, 4]]; [[1],[None],[3],[4]]]
```

Step 1: A(1, 4) × B(4, 1)

My-code result: `[[26]]`

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing B element)

Test #62 (source L205)

```
{{{1,2},{3,4,5},{6}},{{7},{8},{9}}}
```

Executed lists:

```
[[[1, 2],[3, 4, 5],[6]]; [[7],[8],[9]]]
```

Step 1: A(3, 3) × B(3, 1)

My-code result: [[23], [98], [42]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Test #63 (source L207)

```
{{{10,11,12},{13,14,15}},{2,3},{4,5},{6,7}},{1},{2}}}
```

Executed lists:

```
[[[10, 11, 12],[13, 14, 15]]; [[2, 3],[4, 5],[6, 7]]; [[1],[2]]]
```

Step 1: A(2, 3) × B(3, 2)

My-code result: [[136, 169], [172, 214]]

Expected (strict): [[136, 169], [172, 214]]

Step 2: A(2, 2) × B(2, 1)

My-code result: [[474], [600]]

Expected (strict): [[474], [600]]

Test #64 (source L209)

```
{{{1,2}},{{},{ }},{{3,4}}}
```

Executed lists:

```
[[[1, 2]]; [[],[]]; [[3, 4]]]
```

Step 1: A(1, 2) × B(2, 0)

My-code result: [[]]

Expected (strict): [[]]

Step 2: A(1, 0) × B(1, 2)

My-code result: [[0, 0]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=0 rowsB=1)

Test #65 (source L211)

```
{{{1,2,3,4},{5,6,7,8},{9,10,11,12},{13,14,15,16}},{16,15,14,13},{12,11,10,9},{8,7,6,5},{4,3,2,1}}}
```

Executed lists:

```
[[[1, 2, 3, 4],[5, 6, 7, 8],[9, 10, 11, 12],[13, 14, 15, 16]]; [[16, 15, 14, 13],[12, 11, 10, 9],[8, 7, 6, 5],[4, 3, 2, 1]]]
```

Step 1: A(4, 4) × B(4, 4)

My-code result: [[80, 70, 60, 50], [240, 214, 188, 162], [400, 358, 316, 274], [560, 502, 444, 386]]

Expected (strict): [[80, 70, 60, 50], [240, 214, 188, 162], [400, 358, 316, 274], [560, 502, 444, 386]]

Test #66 (source L213)

```
{{{1,2,3},{},{4,5}},{{6},{7,8},{9,10,11}}}
```

Executed lists:

```
[[[1, 2, 3],[],[4, 5]]; [[6],[7, 8],[9, 10, 11]]]
```

Step 1: A(3, 3) x B(3, 3)

My-code result: [[47, 46, 33], [None, None, None], [59, 40, None]]

Expected (strict): Invalid/Discarded (Invalid/Discarded due to missing A element)

Test #67 (source L215)

`{{{1,2,3},{4,5,6}},{{7},{8},{9}}}`

Executed lists:

`[[[1, 2, 3],[4, 5, 6]]; [[7],[8],[9]]]`

Step 1: A(2, 3) × B(3, 1)

My-code result: `[[50], [122]]`

Expected (strict): `[[50], [122]]`

Test #68 (source L217)

```
{{{3,1,8,null,0}},{{9}}}
```

Executed lists:

```
[[[3, 1, 8, None, 0]]; [[9]]]
```

Step 1: A(1, 5) × B(1, 1)

My-code result: [[27]]

Expected (strict): Invalid/Discarded (Incompatible dims colsA=5 rowsB=1)