12 - bar kinematic chains with \( (7, 4, 0, 0, 1) \) linkset

49 total chains

**Chain number 1**

Stratified code: \(
\{[3, 1], [2, 2], [1, 1, 1], [1, 1, 1, 1, 1, 1, 1, 1]
\)

Adjacency matrix:

\[
\begin{array}{cccccccc}
0 & 1 & 0 & 0 & 1 & 0 & 1 & 0 \\
1 & 0 & 0 & 0 & 0 & 1 & 0 & 1 \\
0 & 0 & 1 & 0 & 0 & 0 & 1 & 1 \\
0 & 0 & 0 & 1 & 0 & 0 & 1 & 0 \\
0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\end{array}
\]

**Chain number 2**

Stratified code: \(
\{[3, 1], [3, 1], [1, 1, 1], [1, 1, 1, 1, 1, 1, 1, 1]
\)

Adjacency matrix:

\[
\begin{array}{cccccccc}
0 & 1 & 0 & 1 & 0 & 1 & 0 & 0 \\
1 & 0 & 1 & 0 & 0 & 1 & 1 & 0 \\
0 & 1 & 0 & 1 & 0 & 0 & 1 & 0 \\
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0 & 0 & 0 & 0 & 0 & 0 & 1 & 1 \\
1 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\
0 & 1 & 0 & 0 & 0 & 0 & 1 & 0 \\
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0 & 0 & 1 & 1 & 0 & 0 & 0 & 0 \\
\end{array}
\]

**Chain number 3**

Stratified code: \(
\{[3, 1], [3, 1], [1, 1, 1], [1, 1, 1, 1, 1, 1, 1, 1]
\)

Adjacency matrix:

\[
\begin{array}{cccccccc}
0 & 1 & 0 & 1 & 0 & 1 & 0 & 0 \\
1 & 0 & 1 & 0 & 1 & 0 & 1 & 1 \\
0 & 1 & 0 & 1 & 0 & 0 & 1 & 0 \\
1 & 0 & 0 & 1 & 0 & 0 & 0 & 1 \\
0 & 1 & 0 & 1 & 0 & 0 & 0 & 1 \\
1 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\
0 & 1 & 0 & 0 & 1 & 0 & 0 & 0 \\
0 & 1 & 0 & 0 & 1 & 0 & 0 & 0 \\
0 & 0 & 1 & 1 & 0 & 0 & 0 & 0 \\
\end{array}
\]

**Chain number 4**

Stratified code: \(
\{[3, 1], [3, 1], [2, 1], [1, 1, 1], [1, 1, 1, 1, 1, 1, 1, 1]
\)

Adjacency matrix:

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1 & 0 & 1 & 0 & 1 & 0 & 1 & 0 \\
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0 & 1 & 0 & 1 & 0 & 0 & 0 & 1 \\
1 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\
0 & 1 & 0 & 0 & 0 & 0 & 1 & 0 \\
0 & 1 & 0 & 0 & 0 & 0 & 0 & 1 \\
0 & 0 & 1 & 1 & 0 & 0 & 0 & 0 \\
\end{array}
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**Chain number 5**

Stratified code: \([[3,1],[2,2],[1,1],[1,1],[1],[2,2],[1]]\)

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### Chain number 6

Stratified code: \([[2,2],[2,2],[2,1],[1,1],[1,1],[1],[2,2],[1]]\)

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### Chain number 7

Stratified code: \([[3,2],[3,1],[1,1],[1,1],[1,1],[1],[3,1],[1]]\)

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### Chain number 8

Stratified code: \([[3,2],[3,1],[1,1],[1,1],[1,1],[1],[3,1],[2,2]]\)
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Chain number 9
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</table>

Chain number 10
Stratified code: \([1, 1, (1), (1), (1), (3, 2), (2), (3, 2), (), ()]\)

Adjacency matrix:

<table>
<thead>
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Chain number 11
Stratified code: \([1, (2), (2), (1), (3, 1), (2), (3, 2), (), ()]\)

Adjacency matrix:

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</table>

Chain number 12
Stratified code: \([1, (2), (1), (1), (2, 2), (2), (3, 2), (), ()]\)
Adjacency matrix:

```
0 1 0 0 0 1 1 0 0 0 0 0
1 0 0 0 0 0 1 1 0 0 0 0
0 0 0 1 0 1 1 0 1 0 1 0
0 0 1 0 1 0 0 0 1 0 0 0
0 0 0 1 0 0 0 0 0 0 1 1
1 0 1 0 0 0 0 0 0 0 0 0
1 0 1 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 1 0
0 0 0 0 1 0 0 0 0 1 0 0
0 0 1 0 1 0 0 0 0 0 0 0
```

Chain number 13
Stratified code: {{1, 2}, {1, 3}, {1, 3}, {2, 1, 3}, {}, {}, {}}
Adjacency matrix:

```
0 1 0 0 0 1 1 0 0 0 0 0
1 0 0 0 0 0 1 1 0 0 0 0
0 0 0 1 0 1 1 0 1 0 1 0
0 0 1 0 1 0 0 0 1 0 0 0
0 0 0 1 0 0 0 0 0 0 1 1
```

Chain number 14
Stratified code: {{1, 2}, {2, 1, 3}, {1, 3, 1}, {2, 1, 3}, {}, {}, {}}
Adjacency matrix:

```
0 1 1 0 0 1 0 0 0 0 0 0
1 0 0 0 0 0 1 1 0 0 0 0
0 0 0 1 0 1 1 1 1 0 1 0
0 0 0 1 0 0 0 0 0 0 1 1
```

Chain number 15
Stratified code: {{1, 2}, {2, 1, 3}, {1, 3, 1}, {2, 2, 1}, {}, {}, {}}
Adjacency matrix:

```
0 1 1 0 0 1 0 0 0 0 0 0
1 0 0 0 0 0 1 1 0 0 0 0
0 0 0 1 0 1 1 1 1 0 1 0
0 0 0 1 0 0 0 0 0 0 1 1
```

Chain number 16
Stratified code: {{1, 2}, {2, 1, 3}, {1, 3, 1}, {2, 2, 2}, {}, {}, {}}
Adjacency matrix:

```
0 1 1 0 0 1 0 0 0 0 0 0
```
<table>
<thead>
<tr>
<th>Chain number 17</th>
<th>Stratified code:</th>
<th>Adjacency matrix:</th>
</tr>
</thead>
</table>
| 17              | \{1,2\}, \{1,3,2\}, \{1,3,1\} | \[
0 0 0 0 0 1 1 0 0 0 0 0 \\
1 0 0 0 0 0 0 1 1 0 0 0 \\
0 0 0 0 1 1 1 0 1 1 1 1 \\
0 0 0 1 0 0 0 0 1 1 0 0 \\
0 0 1 0 0 0 0 0 0 1 1 1 \\
1 0 1 0 0 0 0 0 0 0 0 0 \\
0 1 1 0 0 0 0 0 0 0 0 0 \\
0 0 1 1 0 0 0 0 0 0 0 0 \\
0 0 1 0 1 0 0 0 0 0 0 0 \\
0 0 1 0 1 0 0 0 0 0 0 0 
\] |

<table>
<thead>
<tr>
<th>Chain number 18</th>
<th>Stratified code:</th>
<th>Adjacency matrix:</th>
</tr>
</thead>
</table>
| 18              | \{1,2\}, \{1,3,2\}, \{1,3,1\} | \[
0 0 0 0 0 1 0 1 0 0 0 0 \\
1 0 0 1 0 0 0 0 1 0 0 0 \\
0 0 0 0 1 0 1 1 1 1 1 1 \\
0 1 0 0 1 0 0 0 0 1 0 0 \\
0 0 1 1 0 0 0 0 0 0 0 1 \\
1 0 0 0 0 0 1 0 0 0 0 0 \\
0 0 1 0 0 1 0 0 0 0 0 0 \\
0 0 1 0 0 0 0 0 0 0 0 0 \\
0 0 1 1 0 0 0 0 0 0 0 0 \\
0 0 1 0 0 0 0 0 0 0 0 0 \\
0 0 0 0 1 0 0 0 0 0 0 1 
\] |

<table>
<thead>
<tr>
<th>Chain number 19</th>
<th>Stratified code:</th>
<th>Adjacency matrix:</th>
</tr>
</thead>
</table>
| 19              | \{1,3\}, \{1,3,1\} | \[
0 1 1 0 0 1 1 0 0 0 0 0 \\
1 0 0 1 0 0 0 1 1 0 0 0 \\
1 0 0 1 0 0 1 1 1 1 1 1 \\
0 1 1 0 1 0 0 0 0 0 0 0 \\
0 0 0 1 0 0 0 0 0 0 1 1 \\
1 0 0 0 0 0 1 0 0 0 0 0 \\
0 0 1 0 0 0 0 0 0 0 0 0 \\
0 0 1 1 0 0 0 0 0 0 0 0 \\
0 0 1 0 1 0 0 0 0 0 0 0 \\
0 0 1 0 1 0 0 0 0 0 0 0 
\] |

<table>
<thead>
<tr>
<th>Chain number 20</th>
<th>Stratified code:</th>
<th>Adjacency matrix:</th>
</tr>
</thead>
</table>
| 20              | \{1,3\}, \{1,2,2\}, \{1,3\} | \[
0 1 0 0 0 1 1 0 0 1 0 0 \\
0 1 0 0 0 1 1 0 1 1 0 0 \\
1 0 0 0 0 1 1 1 0 1 1 1 \\
0 0 0 0 1 1 0 0 1 1 0 0 \\
0 0 0 0 1 0 0 0 0 0 1 0 \\
0 0 0 1 0 0 0 0 0 0 1 0 \\
0 0 0 0 1 0 0 0 0 1 0 0 \\
0 0 0 1 0 0 0 0 0 1 0 0 
\] |
Adjacency matrix:

Chain number 21
Stratified code: [[[1], [3], [2], [1], [3, 1], [1], [3, 1, []], [], []]

Chain number 22
Stratified code: [[[1], [3], [2], [1], [3, 1], [1], [2, 2, []], [], []]

Chain number 23
Stratified code: [[[1], [3], [2], [1], [2, 2], [1], [3, 1, []], [], []]

Chain number 24
Stratified code: [[[1], [3], [2], [1], [2, 2], [1], [2, 2, []], [], []]
Adjacency matrix:

0 1 0 0 0 1 1 0 0 0 0 0
1 0 1 0 0 0 1 0 0 0 0 0
0 0 0 0 0 1 1 0 1 1 0 1
0 1 0 0 1 0 0 0 0 1 0 0
0 0 0 1 0 0 0 0 0 0 1 1
1 0 1 0 0 0 0 0 0 0 0 0
0 1 0 0 0 0 0 0 0 1 0 0
0 0 1 0 0 0 0 0 0 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0

Chain number 25
Stratified code: \{(2), (1), (1), (3, 2), (2), (3, 2), (1), (1), (1)\}
0 0 1 0 0 0 1 1 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 1 0 0 0 0 0
0 0 1 0 0 0 1 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 1 1
0 0 1 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0

Chain number 26
Stratified code: \{(2), (1), (1), (2), (3, 2), (1), (3, 2), (1), (3, 2), (2)\}
0 0 0 0 0 1 1 1 0 0 0 0
0 0 1 0 0 1 1 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 1 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 1 1
0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 1 0
0 0 0 1 0 0 0 0 0 0 1 0
0 0 0 1 0 0 0 0 0 0 1 0
0 0 0 1 0 0 0 0 0 0 1 0
0 0 0 1 0 0 0 0 0 0 1 0

Chain number 27
Stratified code: \{(2), (1), (1), (2), (3, 1), (3, 1), (2), (1), (3, 1), (1)\}
0 0 1 0 0 0 1 1 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0
1 1 0 1 1 0 0 1 0 1 1 0
0 0 1 0 0 0 1 1 0 1 0 1
0 0 1 0 0 0 0 0 0 1 0 0
0 0 0 1 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0
1 0 0 0 0 0 0 0 0 0 0 0
0 0 0 1 0 0 0 0 0 0 0 0

Chain number 28
Stratified code: \{(2), (1), (1), (2), (3, 1), (3, 1), (2), (2), (2), (1), (1)\}
Adjacency matrix:

0 0 1 0 0 1 1 0 0 0 0 0
0 0 1 0 0 1 0 0 1 0 0 0
1 1 0 1 0 0 1 0 1 1 0 0
0 0 1 0 0 0 0 0 1 0 0 1
0 0 0 0 0 0 0 0 1 1 1 1
1 1 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 1 0 0 1 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0
0 0 0 1 1 0 0 0 0 0 0 0

Chain number 29
Stratified code : [[2],[1],[1],[2],[2],[2],[2],[1],[1],[1]]
0 0 0 0 0 1 1 1 0 0 0 0
0 0 1 0 0 1 0 0 1 0 0 0
1 1 0 1 0 0 1 0 1 1 0 0
0 0 1 0 0 0 0 0 1 0 0 1
0 0 0 0 0 0 0 0 1 1 1 1
1 1 0 0 0 0 0 0 0 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0
0 0 0 1 1 0 0 0 0 0 0 0

Chain number 30
Stratified code : [[2],[1],[1],[2],[3],[1],[1],[3],[2],[1],[1]]
0 0 1 0 0 1 1 0 0 0 0 0
0 0 1 1 0 1 0 0 0 0 0 0
1 1 0 0 0 0 1 1 0 1 1 0
0 1 0 1 0 0 1 1 0 1 1 0
0 0 1 0 1 0 0 1 0 0 0 0
0 0 0 1 0 0 0 0 0 0 1 1
1 1 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 1 1
0 0 0 1 0 0 0 0 1 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0

Chain number 31
Stratified code : [[2],[1],[2],[1],[3],[2],[1],[3],[2],[1],[1]]
0 0 0 0 0 1 1 1 0 0 0 0
0 0 1 1 0 1 0 0 0 0 0 0
1 1 0 0 0 0 1 1 0 1 1 0
0 1 0 1 0 0 1 1 0 1 1 0
0 0 1 0 1 0 0 1 0 0 0 0
0 0 0 1 0 0 0 0 0 0 1 1
1 1 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 1 1
0 0 0 1 0 0 0 0 1 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0

Chain number 32
Stratified code : [[2],[1],[2],[1],[3],[1],[2],[3],[1],[1],[1]]
0 0 0 0 0 1 1 1 0 0 0 0
0 0 1 1 0 1 0 0 0 0 0 0
1 1 0 0 0 0 1 1 0 1 1 0
0 1 0 1 0 0 1 1 0 1 1 0
0 0 1 0 1 0 0 1 0 0 0 0
0 0 0 1 0 0 0 0 0 0 1 1
1 1 0 0 0 0 0 0 0 0 0 0
0 0 1 0 0 0 0 0 0 0 1 1
0 0 0 1 0 0 0 0 1 0 0 0
0 0 1 0 1 0 0 0 0 0 0 0

8
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</table>

Chain number 33
Stratified code: \([(2), (1), (2), (3, 1), (2), (2, 2), , , , ]\)

<table>
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</tr>
<tr>
<td>0 0 0 0 1 0 0 0 0 0 1 0</td>
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</table>

Chain number 34
Stratified code: \([(2), (1), (2), (3, 1), (2), (2, 2), , , , ]\)

<table>
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<tr>
<th>Adjacency matrix</th>
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<tr>
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</tr>
<tr>
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</tr>
</tbody>
</table>

Chain number 35
Stratified code: \([(2), (1), (2), (3, 1), (2), (2, 2), , , , ]\)

<table>
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<th>Adjacency matrix</th>
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<tr>
<td>0 0 0 0 1 0 0 0 0 0 1 0</td>
</tr>
</tbody>
</table>

Chain number 36
Stratified code: \([(2), (1), (3, 1), (3, 1), (1), (3, 1), , , , ]\)
Adjacency matrix:

Chain number 37
Stratified code: 

Chain number 38
Stratified code: 

Chain number 39
Stratified code: 

Chain number 40
Stratified code: 

Stratified code: 

Adjacency matrix:

Stratified code: 

Adjacency matrix:

Adjacency matrix:

Adjacency matrix: 
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<td>Adjacency matrix:</td>
<td>Chain number 46</td>
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<td><img src="image2.png" alt="Chain number 46" /></td>
</tr>
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<td>Adjacency matrix:</td>
<td>Chain number 47</td>
</tr>
<tr>
<td><img src="image1.png" alt="Adjacency matrix" /></td>
<td><img src="image2.png" alt="Chain number 47" /></td>
</tr>
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<td>Adjacency matrix:</td>
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</tr>
<tr>
<td><img src="image1.png" alt="Adjacency matrix" /></td>
<td><img src="image2.png" alt="Chain number 48" /></td>
</tr>
</tbody>
</table>
Adjacency matrix:

\[
\begin{array}{ccccccccccccc}
0 & 0 & 0 & 0 & 1 & 1 & 1 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 1 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 1 & 0 & 1 & 1 & 1 & 1 & 1 & 0 \\
0 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\
0 & 0 & 1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\
1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\
0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 \\
\end{array}
\]

Chain number 49

Stratified code: (2, (2), (2), (1), (2, 2), (1), (2, 2), (), (), ()

Adjacency matrix:

\[
\begin{array}{ccccccccccccc}
0 & 0 & 0 & 0 & 1 & 1 & 1 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 1 & 0 & 1 & 0 & 0 & 1 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 1 & 1 & 1 \\
0 & 1 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\end{array}
\]