

# Lattice multiplication with two three-digit numbers (3x3)

*Solutions are on page 2*

|  |   |   |
|--|---|---|
| <p>(1) <math>987 \times 654 = 645,498</math></p> | <p>(2) <math>444 \times 288 =</math></p>  | <p>(3) <math>649 \times 573 =</math></p>  |
| <p>(4) <math>788 \times 947 =</math></p>         | <p>(5) <math>106 \times 822 =</math></p>  | <p>(6) <math>585 \times 774 =</math></p>  |
| <p>(7) <math>653 \times 172 =</math></p>         | <p>(8) <math>414 \times 147 =</math></p>  | <p>(9) <math>467 \times 721 =</math></p>  |
| <p>(10) <math>136 \times 513 =</math></p>        | <p>(11) <math>919 \times 710 =</math></p> | <p>(12) <math>516 \times 428 =</math></p> |

# Lattice multiplication with two three-digit numbers (3x3)

Also see the Worksheets and Walkthroughs video: 'Multiplication--The Lattice Method'

|  |               |               |                      |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|--|---------------|---------------|----------------------|---|--|---|---------------|---------------|----------------------|---|---|---|---|---|---|---|---|---|---|---|--|---|---|---|--|---|--|---|---|---|--|---|---------------|---------------|----------------------|---|---|---|---|---|---|---|---|---|---|---|--|---|---|---|--|---|--|---|---|---|--|---|---------------|---------------|----------------------|---|---|---|---|---|---|---|---|---|---|---|--|---|---|---|--|
| <p>(1) <math>987 \times 654 = 645,498</math></p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td></td><td style="text-align: center;">9</td><td style="text-align: center;">8</td><td style="text-align: center;">7</td><td></td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">6</td><td style="border: 1px solid black; padding: 5px;"><math>5^{+1}</math><br/>4</td><td style="border: 1px solid black; padding: 5px;"><math>4^{+2}</math><br/>8</td><td style="border: 1px solid black; padding: 5px;"><math>4^{+1}</math><br/><math>2^{+0}</math></td><td style="border-right: 1px solid black; padding: 5px;">6</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">4</td><td style="border: 1px solid black; padding: 5px;">4</td><td style="border: 1px solid black; padding: 5px;">5</td><td style="border: 1px solid black; padding: 5px;">4</td><td style="border-right: 1px solid black; padding: 5px;">5</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">5</td><td style="border: 1px solid black; padding: 5px;">3</td><td style="border: 1px solid black; padding: 5px;">6</td><td style="border: 1px solid black; padding: 5px;">2</td><td style="border-right: 1px solid black; padding: 5px;">4</td></tr> <tr><td></td><td style="text-align: center;">4</td><td style="text-align: center;">9</td><td style="text-align: center;">8</td><td></td></tr> </table> |               | 9             | 8                    | 7 |  | 6 | $5^{+1}$<br>4 | $4^{+2}$<br>8 | $4^{+1}$<br>$2^{+0}$ | 6 | 4 | 4 | 5 | 4 | 5 | 5 | 3 | 6 | 2 | 4 |  | 4 | 9 | 8 |  | <p>(2) <math>444 \times 288 = 127,872</math></p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td></td><td style="text-align: center;">4</td><td style="text-align: center;">4</td><td style="text-align: center;">4</td><td></td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">1</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+1}</math><br/>8</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+1}</math><br/>8</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+1}</math><br/><math>8^{+0}</math></td><td style="border-right: 1px solid black; padding: 5px;">2</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">2</td><td style="border: 1px solid black; padding: 5px;">3</td><td style="border: 1px solid black; padding: 5px;">2</td><td style="border: 1px solid black; padding: 5px;">3</td><td style="border-right: 1px solid black; padding: 5px;">8</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">7</td><td style="border: 1px solid black; padding: 5px;">3</td><td style="border: 1px solid black; padding: 5px;">2</td><td style="border: 1px solid black; padding: 5px;">3</td><td style="border-right: 1px solid black; padding: 5px;">8</td></tr> <tr><td></td><td style="text-align: center;">8</td><td style="text-align: center;">7</td><td style="text-align: center;">2</td><td></td></tr> </table>  |  | 4 | 4 | 4 |  | 1 | $0^{+1}$<br>8 | $0^{+1}$<br>8 | $0^{+1}$<br>$8^{+0}$ | 2 | 2 | 3 | 2 | 3 | 8 | 7 | 3 | 2 | 3 | 8 |  | 8 | 7 | 2 |  | <p>(3) <math>649 \times 573 = 371,877</math></p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td></td><td style="text-align: center;">6</td><td style="text-align: center;">4</td><td style="text-align: center;">9</td><td></td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">3</td><td style="border: 1px solid black; padding: 5px;"><math>3^{+0}</math><br/>0</td><td style="border: 1px solid black; padding: 5px;"><math>2^{+1}</math><br/>0</td><td style="border: 1px solid black; padding: 5px;"><math>4^{+2}</math><br/><math>5^{+0}</math></td><td style="border-right: 1px solid black; padding: 5px;">5</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">7</td><td style="border: 1px solid black; padding: 5px;">4</td><td style="border: 1px solid black; padding: 5px;">2</td><td style="border: 1px solid black; padding: 5px;">8</td><td style="border-right: 1px solid black; padding: 5px;">7</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">1</td><td style="border: 1px solid black; padding: 5px;">1</td><td style="border: 1px solid black; padding: 5px;">8</td><td style="border: 1px solid black; padding: 5px;">2</td><td style="border-right: 1px solid black; padding: 5px;">3</td></tr> <tr><td></td><td style="text-align: center;">8</td><td style="text-align: center;">7</td><td style="text-align: center;">7</td><td></td></tr> </table>  |  | 6 | 4 | 9 |  | 3 | $3^{+0}$<br>0 | $2^{+1}$<br>0 | $4^{+2}$<br>$5^{+0}$ | 5 | 7 | 4 | 2 | 8 | 7 | 1 | 1 | 8 | 2 | 3 |  | 8 | 7 | 7 |  |
|  | 9             | 8             | 7                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 6  | $5^{+1}$<br>4 | $4^{+2}$<br>8 | $4^{+1}$<br>$2^{+0}$ | 6 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 4  | 4             | 5             | 4                    | 5 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 5  | 3             | 6             | 2                    | 4 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 4             | 9             | 8                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 4             | 4             | 4                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 1  | $0^{+1}$<br>8 | $0^{+1}$<br>8 | $0^{+1}$<br>$8^{+0}$ | 2 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 2  | 3             | 2             | 3                    | 8 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 7  | 3             | 2             | 3                    | 8 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 8             | 7             | 2                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 6             | 4             | 9                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 3  | $3^{+0}$<br>0 | $2^{+1}$<br>0 | $4^{+2}$<br>$5^{+0}$ | 5 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 7  | 4             | 2             | 8                    | 7 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 1  | 1             | 8             | 2                    | 3 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 8             | 7             | 7                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| <p>(4) <math>788 \times 947 = 746,236</math></p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td></td><td style="text-align: center;">7</td><td style="text-align: center;">8</td><td style="text-align: center;">8</td><td></td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">7</td><td style="border: 1px solid black; padding: 5px;"><math>6^{+1}</math><br/>3</td><td style="border: 1px solid black; padding: 5px;"><math>7^{+2}</math><br/>2</td><td style="border: 1px solid black; padding: 5px;"><math>7^{+2}</math><br/><math>2^{+1}</math></td><td style="border-right: 1px solid black; padding: 5px;">9</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">4</td><td style="border: 1px solid black; padding: 5px;">2</td><td style="border: 1px solid black; padding: 5px;">8</td><td style="border: 1px solid black; padding: 5px;">3</td><td style="border-right: 1px solid black; padding: 5px;">4</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">6</td><td style="border: 1px solid black; padding: 5px;">4</td><td style="border: 1px solid black; padding: 5px;">9</td><td style="border: 1px solid black; padding: 5px;">5</td><td style="border-right: 1px solid black; padding: 5px;">7</td></tr> <tr><td></td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">6</td><td></td></tr> </table> |               | 7             | 8                    | 8 |  | 7 | $6^{+1}$<br>3 | $7^{+2}$<br>2 | $7^{+2}$<br>$2^{+1}$ | 9 | 4 | 2 | 8 | 3 | 4 | 6 | 4 | 9 | 5 | 7 |  | 2 | 3 | 6 |  | <p>(5) <math>106 \times 822 = 87,132</math></p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td></td><td style="text-align: center;">1</td><td style="text-align: center;">0</td><td style="text-align: center;">6</td><td></td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">0</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+0}</math><br/>8</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+0}</math><br/>0</td><td style="border: 1px solid black; padding: 5px;"><math>4^{+1}</math><br/><math>8^{+0}</math></td><td style="border-right: 1px solid black; padding: 5px;">8</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">8</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border: 1px solid black; padding: 5px;">2</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border-right: 1px solid black; padding: 5px;">2</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">7</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border: 1px solid black; padding: 5px;">2</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border-right: 1px solid black; padding: 5px;">2</td></tr> <tr><td></td><td style="text-align: center;">1</td><td style="text-align: center;">3</td><td style="text-align: center;">2</td><td></td></tr> </table>   |  | 1 | 0 | 6 |  | 0 | $0^{+0}$<br>8 | $0^{+0}$<br>0 | $4^{+1}$<br>$8^{+0}$ | 8 | 8 | 0 | 2 | 0 | 2 | 7 | 0 | 2 | 0 | 2 |  | 1 | 3 | 2 |  | <p>(6) <math>585 \times 774 = 452,790</math></p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td></td><td style="text-align: center;">5</td><td style="text-align: center;">8</td><td style="text-align: center;">5</td><td></td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">4</td><td style="border: 1px solid black; padding: 5px;"><math>3^{+1}</math><br/>5</td><td style="border: 1px solid black; padding: 5px;"><math>5^{+2}</math><br/>6</td><td style="border: 1px solid black; padding: 5px;"><math>3^{+1}</math><br/><math>5^{+0}</math></td><td style="border-right: 1px solid black; padding: 5px;">7</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">5</td><td style="border: 1px solid black; padding: 5px;">3</td><td style="border: 1px solid black; padding: 5px;">5</td><td style="border: 1px solid black; padding: 5px;">6</td><td style="border-right: 1px solid black; padding: 5px;">7</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">2</td><td style="border: 1px solid black; padding: 5px;">2</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border: 1px solid black; padding: 5px;">3</td><td style="border-right: 1px solid black; padding: 5px;">4</td></tr> <tr><td></td><td style="text-align: center;">7</td><td style="text-align: center;">9</td><td style="text-align: center;">0</td><td></td></tr> </table>  |  | 5 | 8 | 5 |  | 4 | $3^{+1}$<br>5 | $5^{+2}$<br>6 | $3^{+1}$<br>$5^{+0}$ | 7 | 5 | 3 | 5 | 6 | 7 | 2 | 2 | 0 | 3 | 4 |  | 7 | 9 | 0 |  |
|  | 7             | 8             | 8                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 7  | $6^{+1}$<br>3 | $7^{+2}$<br>2 | $7^{+2}$<br>$2^{+1}$ | 9 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 4  | 2             | 8             | 3                    | 4 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 6  | 4             | 9             | 5                    | 7 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 2             | 3             | 6                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 1             | 0             | 6                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 0  | $0^{+0}$<br>8 | $0^{+0}$<br>0 | $4^{+1}$<br>$8^{+0}$ | 8 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 8  | 0             | 2             | 0                    | 2 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 7  | 0             | 2             | 0                    | 2 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 1             | 3             | 2                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 5             | 8             | 5                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 4  | $3^{+1}$<br>5 | $5^{+2}$<br>6 | $3^{+1}$<br>$5^{+0}$ | 7 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 5  | 3             | 5             | 6                    | 7 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 2  | 2             | 0             | 3                    | 4 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 7             | 9             | 0                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| <p>(7) <math>653 \times 172 = 112,316</math></p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td></td><td style="text-align: center;">6</td><td style="text-align: center;">5</td><td style="text-align: center;">3</td><td></td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">1</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+1}</math><br/>6</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+1}</math><br/>5</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+1}</math><br/><math>3^{+0}</math></td><td style="border-right: 1px solid black; padding: 5px;">1</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">1</td><td style="border: 1px solid black; padding: 5px;">4</td><td style="border: 1px solid black; padding: 5px;">2</td><td style="border: 1px solid black; padding: 5px;">3</td><td style="border-right: 1px solid black; padding: 5px;">7</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">2</td><td style="border: 1px solid black; padding: 5px;">1</td><td style="border: 1px solid black; padding: 5px;">2</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border-right: 1px solid black; padding: 5px;">2</td></tr> <tr><td></td><td style="text-align: center;">3</td><td style="text-align: center;">1</td><td style="text-align: center;">6</td><td></td></tr> </table> |               | 6             | 5                    | 3 |  | 1 | $0^{+1}$<br>6 | $0^{+1}$<br>5 | $0^{+1}$<br>$3^{+0}$ | 1 | 1 | 4 | 2 | 3 | 7 | 2 | 1 | 2 | 0 | 2 |  | 3 | 1 | 6 |  | <p>(8) <math>414 \times 147 = 60,858</math></p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td></td><td style="text-align: center;">4</td><td style="text-align: center;">1</td><td style="text-align: center;">4</td><td></td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">0</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+0}</math><br/>4</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+1}</math><br/>1</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+1}</math><br/><math>4^{+1}</math></td><td style="border-right: 1px solid black; padding: 5px;">1</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">6</td><td style="border: 1px solid black; padding: 5px;">1</td><td style="border: 1px solid black; padding: 5px;">6</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border-right: 1px solid black; padding: 5px;">4</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">0</td><td style="border: 1px solid black; padding: 5px;">2</td><td style="border: 1px solid black; padding: 5px;">8</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border-right: 1px solid black; padding: 5px;">7</td></tr> <tr><td></td><td style="text-align: center;">8</td><td style="text-align: center;">5</td><td style="text-align: center;">8</td><td></td></tr> </table>   |  | 4 | 1 | 4 |  | 0 | $0^{+0}$<br>4 | $0^{+1}$<br>1 | $0^{+1}$<br>$4^{+1}$ | 1 | 6 | 1 | 6 | 0 | 4 | 0 | 2 | 8 | 0 | 7 |  | 8 | 5 | 8 |  | <p>(9) <math>467 \times 721 = 336,707</math></p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td></td><td style="text-align: center;">4</td><td style="text-align: center;">6</td><td style="text-align: center;">7</td><td></td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">3</td><td style="border: 1px solid black; padding: 5px;"><math>2^{+1}</math><br/>8</td><td style="border: 1px solid black; padding: 5px;"><math>4^{+1}</math><br/>2</td><td style="border: 1px solid black; padding: 5px;"><math>4^{+1}</math><br/><math>9^{+1}</math></td><td style="border-right: 1px solid black; padding: 5px;">7</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">3</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border: 1px solid black; padding: 5px;">8</td><td style="border: 1px solid black; padding: 5px;">1</td><td style="border-right: 1px solid black; padding: 5px;">2</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">6</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border: 1px solid black; padding: 5px;">4</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border-right: 1px solid black; padding: 5px;">1</td></tr> <tr><td></td><td style="text-align: center;">7</td><td style="text-align: center;">0</td><td style="text-align: center;">7</td><td></td></tr> </table>  |  | 4 | 6 | 7 |  | 3 | $2^{+1}$<br>8 | $4^{+1}$<br>2 | $4^{+1}$<br>$9^{+1}$ | 7 | 3 | 0 | 8 | 1 | 2 | 6 | 0 | 4 | 0 | 1 |  | 7 | 0 | 7 |  |
|  | 6             | 5             | 3                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 1  | $0^{+1}$<br>6 | $0^{+1}$<br>5 | $0^{+1}$<br>$3^{+0}$ | 1 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 1  | 4             | 2             | 3                    | 7 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 2  | 1             | 2             | 0                    | 2 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 3             | 1             | 6                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 4             | 1             | 4                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 0  | $0^{+0}$<br>4 | $0^{+1}$<br>1 | $0^{+1}$<br>$4^{+1}$ | 1 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 6  | 1             | 6             | 0                    | 4 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 0  | 2             | 8             | 0                    | 7 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 8             | 5             | 8                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 4             | 6             | 7                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 3  | $2^{+1}$<br>8 | $4^{+1}$<br>2 | $4^{+1}$<br>$9^{+1}$ | 7 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 3  | 0             | 8             | 1                    | 2 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 6  | 0             | 4             | 0                    | 1 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 7             | 0             | 7                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| <p>(10) <math>136 \times 513 = 69,768</math></p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td></td><td style="text-align: center;">1</td><td style="text-align: center;">3</td><td style="text-align: center;">6</td><td></td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">0</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+0}</math><br/>5</td><td style="border: 1px solid black; padding: 5px;"><math>1^{+0}</math><br/>5</td><td style="border: 1px solid black; padding: 5px;"><math>3^{+0}</math><br/><math>0^{+1}</math></td><td style="border-right: 1px solid black; padding: 5px;">5</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">6</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border: 1px solid black; padding: 5px;">1</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border-right: 1px solid black; padding: 5px;">1</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">9</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border: 1px solid black; padding: 5px;">3</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border-right: 1px solid black; padding: 5px;">3</td></tr> <tr><td></td><td style="text-align: center;">7</td><td style="text-align: center;">6</td><td style="text-align: center;">8</td><td></td></tr> </table> |               | 1             | 3                    | 6 |  | 0 | $0^{+0}$<br>5 | $1^{+0}$<br>5 | $3^{+0}$<br>$0^{+1}$ | 5 | 6 | 0 | 1 | 0 | 1 | 9 | 0 | 3 | 0 | 3 |  | 7 | 6 | 8 |  | <p>(11) <math>919 \times 710 = 652,490</math></p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td></td><td style="text-align: center;">9</td><td style="text-align: center;">1</td><td style="text-align: center;">9</td><td></td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">6</td><td style="border: 1px solid black; padding: 5px;"><math>6^{+0}</math><br/>3</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+2}</math><br/>7</td><td style="border: 1px solid black; padding: 5px;"><math>6^{+0}</math><br/><math>3^{+0}</math></td><td style="border-right: 1px solid black; padding: 5px;">7</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">5</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border: 1px solid black; padding: 5px;">9</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border-right: 1px solid black; padding: 5px;">1</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">2</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border-right: 1px solid black; padding: 5px;">0</td></tr> <tr><td></td><td style="text-align: center;">4</td><td style="text-align: center;">9</td><td style="text-align: center;">0</td><td></td></tr> </table> |  | 9 | 1 | 9 |  | 6 | $6^{+0}$<br>3 | $0^{+2}$<br>7 | $6^{+0}$<br>$3^{+0}$ | 7 | 5 | 0 | 9 | 0 | 1 | 2 | 0 | 0 | 0 | 0 |  | 4 | 9 | 0 |  | <p>(12) <math>516 \times 428 = 220,848</math></p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr><td></td><td style="text-align: center;">5</td><td style="text-align: center;">1</td><td style="text-align: center;">6</td><td></td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">2</td><td style="border: 1px solid black; padding: 5px;"><math>2^{+0}</math><br/>0</td><td style="border: 1px solid black; padding: 5px;"><math>0^{+1}</math><br/>4</td><td style="border: 1px solid black; padding: 5px;"><math>2^{+0}</math><br/><math>4^{+1}</math></td><td style="border-right: 1px solid black; padding: 5px;">4</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">2</td><td style="border: 1px solid black; padding: 5px;">1</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border-right: 1px solid black; padding: 5px;">2</td></tr> <tr><td style="border-right: 1px solid black; border-bottom: 1px solid black;">0</td><td style="border: 1px solid black; padding: 5px;">4</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border: 1px solid black; padding: 5px;">0</td><td style="border-right: 1px solid black; padding: 5px;">8</td></tr> <tr><td></td><td style="text-align: center;">8</td><td style="text-align: center;">4</td><td style="text-align: center;">8</td><td></td></tr> </table> |  | 5 | 1 | 6 |  | 2 | $2^{+0}$<br>0 | $0^{+1}$<br>4 | $2^{+0}$<br>$4^{+1}$ | 4 | 2 | 1 | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 8 |  | 8 | 4 | 8 |  |
|  | 1             | 3             | 6                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 0  | $0^{+0}$<br>5 | $1^{+0}$<br>5 | $3^{+0}$<br>$0^{+1}$ | 5 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 6  | 0             | 1             | 0                    | 1 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 9  | 0             | 3             | 0                    | 3 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 7             | 6             | 8                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 9             | 1             | 9                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 6  | $6^{+0}$<br>3 | $0^{+2}$<br>7 | $6^{+0}$<br>$3^{+0}$ | 7 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 5  | 0             | 9             | 0                    | 1 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 2  | 0             | 0             | 0                    | 0 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 4             | 9             | 0                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 5             | 1             | 6                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 2  | $2^{+0}$<br>0 | $0^{+1}$<br>4 | $2^{+0}$<br>$4^{+1}$ | 4 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 2  | 1             | 0             | 0                    | 2 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
| 0  | 4             | 0             | 0                    | 8 |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |
|  | 8             | 4             | 8                    |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |  |   |   |   |  |   |               |               |                      |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |  |