

Part (1)

$$\square \rightsquigarrow \boxed{3}$$

Product: 3

Hooks: 1

$$\Rightarrow d = 3$$

$$\begin{array}{|c|} \hline \square \\ \hline \end{array} \rightsquigarrow \begin{array}{|c|} \hline 3 \\ \hline 2 \\ \hline \end{array}$$

Product: $3 \cdot 2$ Hooks: $2 \cdot 1$

$$\Rightarrow d = 3$$

Also written as $\overline{3}$

$$\begin{array}{|c|} \hline \square \\ \hline \square \\ \hline \end{array} \rightsquigarrow \begin{array}{|c|} \hline 3 \\ \hline 2 \\ \hline 1 \\ \hline \end{array}$$

Product: 6

Hooks: $3 \cdot 2 \cdot 1$

$$\Rightarrow d = 1$$

$$\square \square \rightsquigarrow \boxed{3|4}$$

Product: 12

Hooks: 2

$$d = 6$$

$$\begin{array}{|c|c|} \hline \square & \square \\ \hline \square & \square \\ \hline \end{array} \rightsquigarrow \begin{array}{|c|c|} \hline 3 & 4 \\ \hline 2 & \square \\ \hline \end{array}$$

Product: 24

Hooks: 3

$$d = 8$$

$$\begin{array}{|c|c|c|c|} \hline 3 & 4 & 5 & 6 \\ \hline 2 & 3 & 4 & \\ \hline 1 & & & \\ \hline \end{array}$$

$$= \frac{\cancel{3} \cdot \cancel{4} \cdot 5 \cdot \cancel{6} \cdot \cancel{2} \cdot 3 \cdot \cancel{4}}{\cancel{6} \cdot \cancel{4} \cdot \cancel{3} \cdot \cancel{4} \cdot \cancel{2}} = 15 = d$$

$$\begin{array}{|c|c|c|c|} \hline 6 & 4 & 3 & 1 \\ \hline 4 & 2 & 1 & \\ \hline 1 & & & \\ \hline \end{array}$$

Part (2)

Now the number in the top left box changes to 2 and 4 respectively. The algorithm should be clear now (ask me if not), so that I leave those out here.