

$$5 = 4 + [1]$$

$$5 = 3 + [2]$$

$$5 = 2 + [3]$$

$$5 = 1 + [4]$$

$$5 = [1] + 4$$

$$5 = [2] + 3$$

$$5 = [3] + 2$$

$$5 = [4] + 1$$

$$5 = [3] + 2$$

$$5 = 3 + [2]$$

$$5 = [1] + 4$$

$$5 = 4 + [1]$$

$$5 = [1] + 4$$

$$5 = 3 + [2]$$

$$5 = [4] + 1$$

$$5 = 1 + [4]$$

$$[10] = 5 + 5$$

$$5 = 3 + [2]$$

$$6 = [1] + 5$$

$$[5] = 1 + 4$$

$$5 = [1] + 4$$

$$[7] = 5 + 2$$

$$[5] = 3 + 2$$

$$8 = [3] + 5$$

$$5 = [3] + 2$$

$$10 = 5 + [5]$$

$$[5] = 1 + 4$$

$$9 = 4 + [5]$$

$$[7] = 2 + 5$$

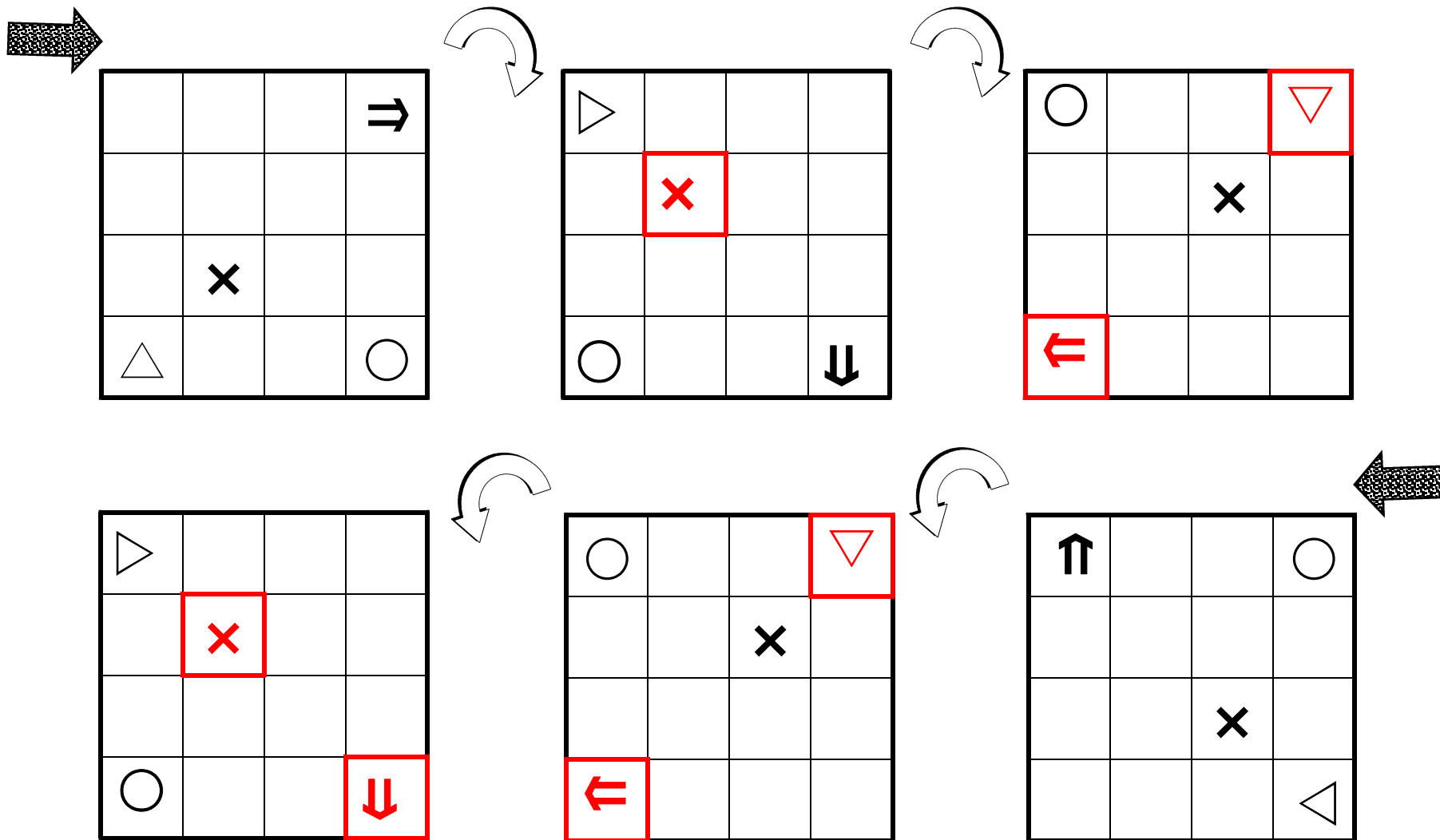
$$5 = 3 + [2]$$

$$6 = [5] + 1$$

$$[5] = 2 + 3$$

A 正方形4×4の回転

正方形が矢印の方向に転がり、もどってきました。それぞれの正方形に記号を書き入れなさい。わからなければ、左はしの正方形をハサミで切り抜いて回転させましょう。



$$[9] = 5 + 4$$

$$5 = 7 - [2]$$

$$5 = 6 - [1]$$

$$10 = [8] + 2$$

$$8 = 3 + [5]$$

$$[5] = 8 - 3$$

$$4 = 9 - [5]$$

$$3 = [5] - 2$$

$$5 = 3 + [2]$$

$$5 = [10] - 5$$

$$2 = 10 - [8]$$

$$5 = [4] + 1$$

$$6 = [1] + 5$$

$$5 = 4 + [1]$$

$$[2] = 7 - 5$$

$$5 = 8 - [3]$$

$$10 = 8 + [2]$$

$$3 = [8] - 5$$

$$10 = 7 + [3]$$

$$[9] = 5 + 4$$

$$5 = 9 - [4]$$

$$4 = 5 - [1]$$

$$8 = [5] + 3$$

$$[10] = 3 + 7$$

$$3 = [8] - 5$$

$$[2] = 7 - 5$$

$$2 = 10 - [8]$$

$$1 = [10] - 9$$

$$2 = 7 - [5]$$

$$4 = 5 - [1]$$

$$5 = [10] - 5$$

$$[4] = 9 - 5$$

$$[3] = 8 - 5$$

$$1 = 10 - [9]$$

$$5 = 9 - [4]$$

$$10 = [3] + 7$$

$$[9] = 14 - 5$$

$$[14] = 9 + 5$$

$$13 = 8 + [5]$$

$$14 = 7 + [7]$$

$$7 = 13 - [6]$$

$$9 = 12 - [3]$$

$$7 = [13] - 6$$

$$6 = 13 - [7]$$

$$4 = 13 - [9]$$

$$[9] = 14 - 5$$

$$9 = 13 - [4]$$

$$13 = [7] + 6$$

$$11 = [7] + 4$$

$$13 = [8] + 5$$

$$7 = 14 - [7]$$

$$14 = 5 + [9]$$

$$[14] = 6 + 8$$

$$5 = 14 - [9]$$

$$9 = 13 - [4]$$

$$[13] = 4 + 9$$

$$6 = 13 - [7]$$

$$[12] = 6 + 6$$

$$6 = [13] - 7$$

$$8 = [13] - 5$$

$$12 = [4] + 8$$

$$[7] = 11 - 4$$

$$14 = 9 + [5]$$

$$[4] = 11 - 7$$

$$14 = 3 + [11]$$

$$[13] = 2 + 11$$

$$8 = [12] - 4$$

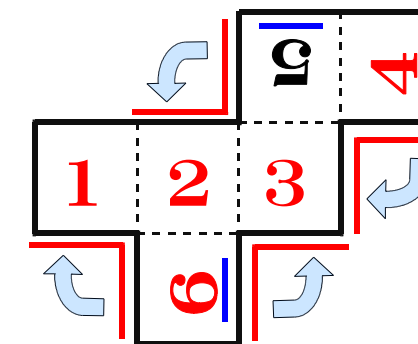
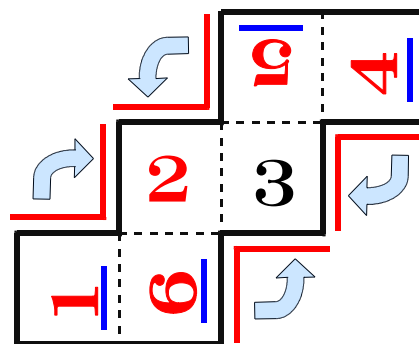
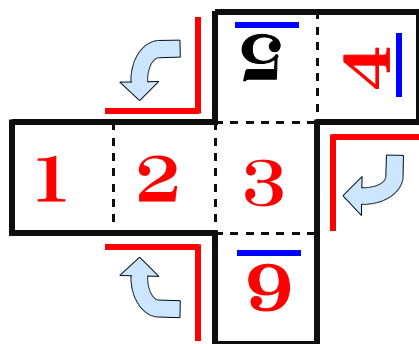
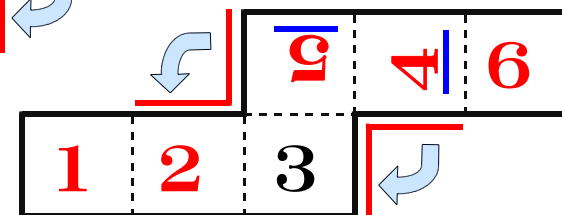
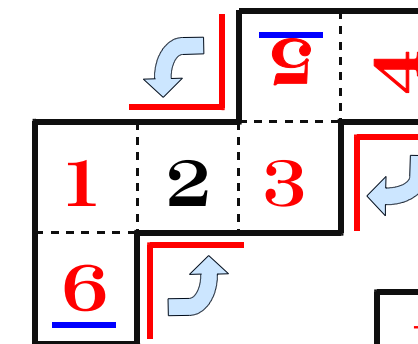
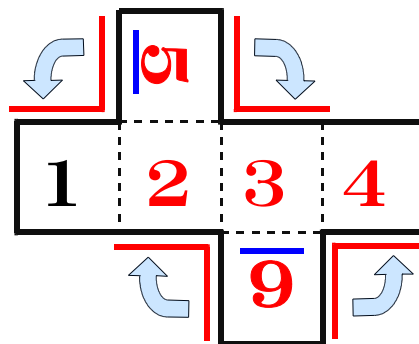
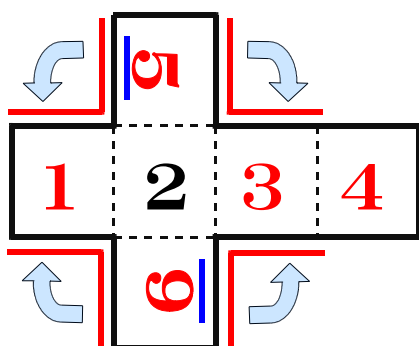
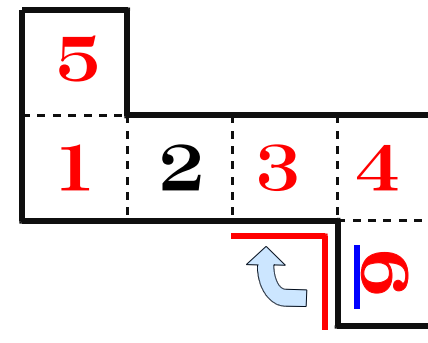
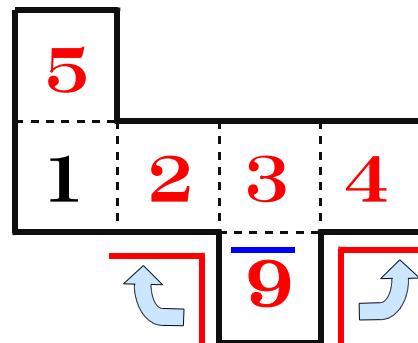
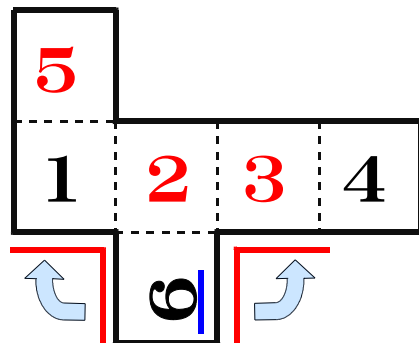
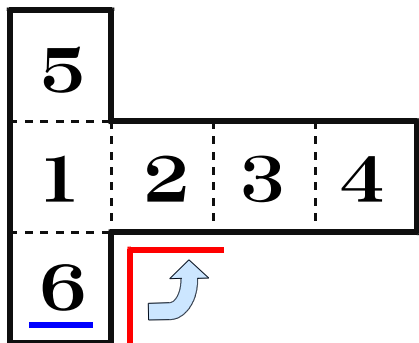
$$8 = 13 - [5]$$

$$3 = [14] - 11$$

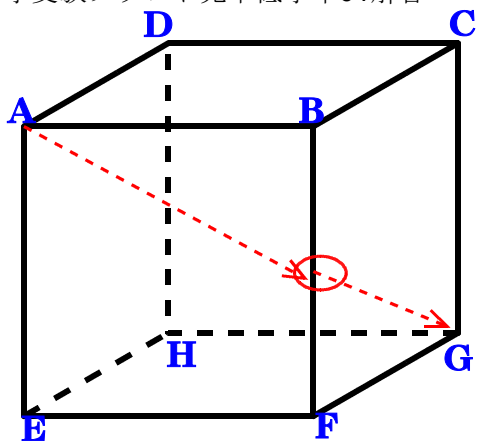
$$8 = 13 - [5]$$

$$14 = [7] + 7$$

$$9 = [13] - 4$$



どの辺とどの辺がくっつくかに注目しましょう。また、数字の下に線を書き入ると数字の向きがどう変わるかがわかりやすくなります。

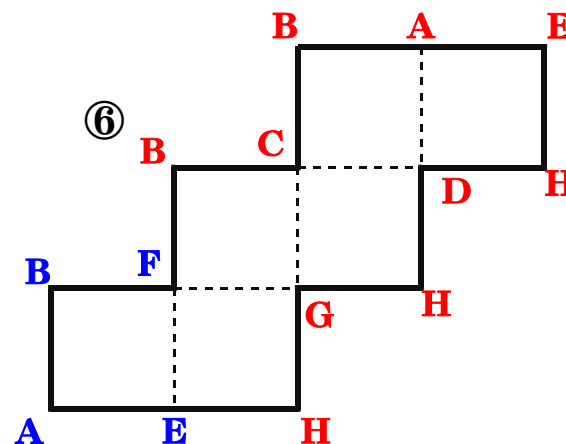
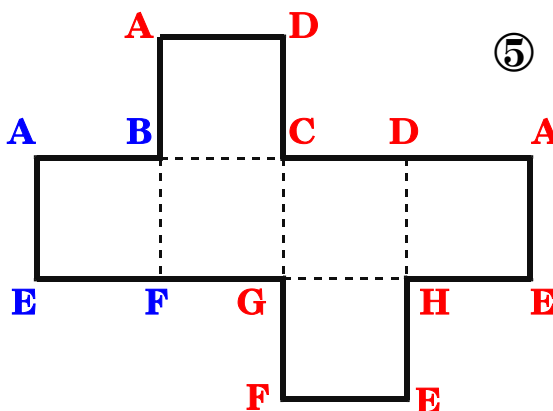
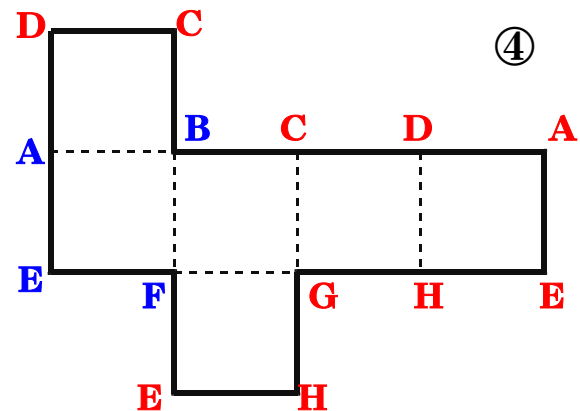
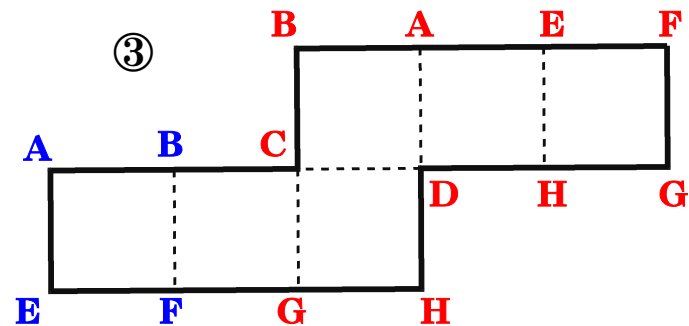
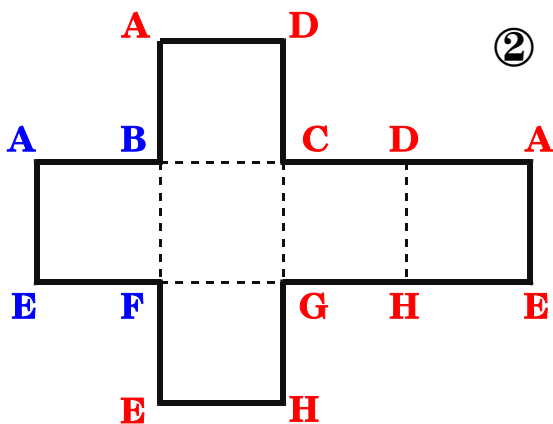
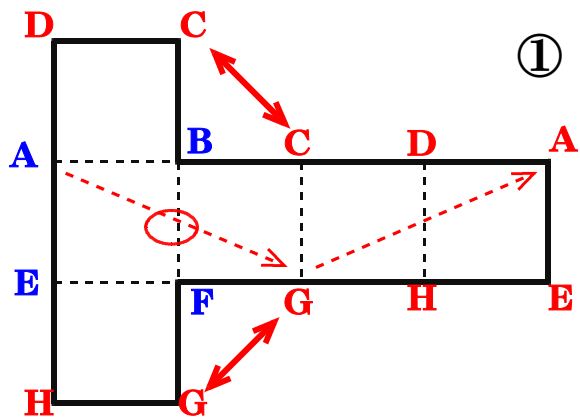


問 立方体の正面ABEFが展開図のABEFです。展開図①～⑥のすべての頂点にAからHまでの記号を書き込みなさい。

展開図の①のCとCやGとGを角合わせ、AからGを経由してAに戻るラインを4面1周、と呼びます。

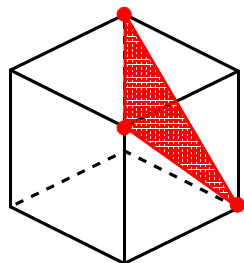
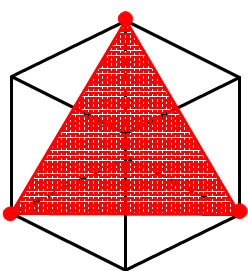
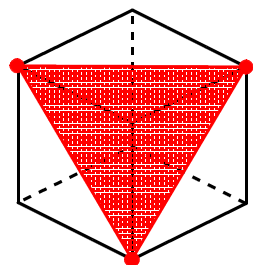
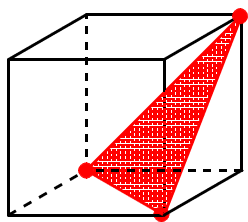
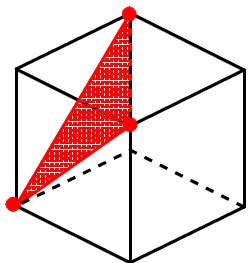
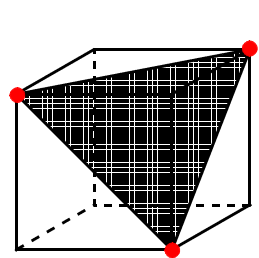
この2つの解き方をおぼえるだけでどんな展開図もOKです。

角合わせはすぐにわかりますね。4面1周ですが、まず、立方体の表面を通してAとGを結びます。途中、BとFの真ん中を通ることもわかりますね。で、Gからさらにくるりと周るとA戻ってきます。Eもこの解法で簡単に解くことができます。

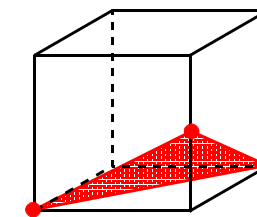
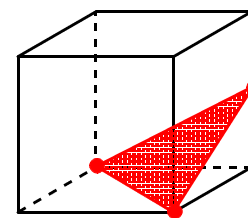
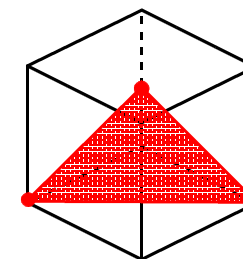
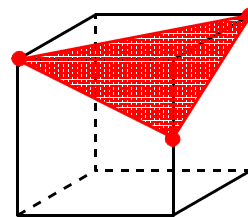
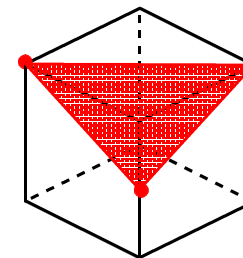
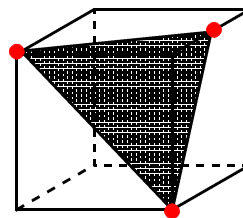


A 三角形の立体切断

①下の立方体は3点を通る平面で切り分けると切断面はいずれも正三角形になりました。見本にならい切断面を書き入れなさい。



②下の立方体は3点を通る平面で切り分けると切断面は二等辺三角形になりました。見本にならい切断面を書き入れなさい。



$$\begin{array}{r}
 46 \\
 + 35 \\
 \hline
 \boxed{0}7\boxed{0} \leftarrow 40+30 \\
 \text{■} \boxed{1}1 \leftarrow 6+5 \\
 \hline
 081
 \end{array}$$

$$\begin{array}{r}
 48 \\
 + 55 \\
 \hline
 \boxed{0}9\boxed{0} \leftarrow 40+50 \\
 \text{■} \boxed{1}3 \leftarrow 8+5 \\
 \hline
 103
 \end{array}$$

$$\begin{array}{r}
 66 \\
 + 18 \\
 \hline
 \boxed{0}7\boxed{0} \leftarrow 60+10 \\
 \text{■} \boxed{1}4 \leftarrow 6+8 \\
 \hline
 083
 \end{array}$$

$$\begin{array}{r}
 27 \\
 + 35 \\
 \hline
 \boxed{0}5\boxed{0} \leftarrow 20+30 \\
 \text{■} \boxed{1}2 \leftarrow 7+5 \\
 \hline
 062
 \end{array}$$

$$\begin{array}{r}
 26 \\
 + 67 \\
 \hline
 \boxed{0}8\boxed{0} \leftarrow 20+60 \\
 \text{■} \boxed{1}3 \leftarrow 6+7 \\
 \hline
 093
 \end{array}$$

$$\begin{array}{r}
 46 \\
 + 69 \\
 \hline
 \boxed{1}0\boxed{0} \leftarrow 40+60 \\
 \text{■} \boxed{1}5 \leftarrow 6+9 \\
 \hline
 115
 \end{array}$$

$$\begin{array}{r}
 89 \\
 + 97 \\
 \hline
 170 \\
 \text{■}16 \\
 \hline
 186
 \end{array}$$

$$\begin{array}{r}
 76 \\
 + 38 \\
 \hline
 100 \\
 \text{■}14 \\
 \hline
 114
 \end{array}$$

$$\begin{array}{r}
 65 \\
 + 77 \\
 \hline
 130 \\
 \text{■}12 \\
 \hline
 142
 \end{array}$$

$$\begin{array}{r}
 87 \\
 + 77 \\
 \hline
 150 \\
 \text{■}14 \\
 \hline
 164
 \end{array}$$

$$\begin{array}{r}
 96 \\
 + 38 \\
 \hline
 120 \\
 \text{■}14 \\
 \hline
 134
 \end{array}$$

$$\begin{array}{r}
 86 \\
 + 79 \\
 \hline
 150 \\
 \text{■}15 \\
 \hline
 165
 \end{array}$$

$$\begin{array}{r}
 96 \\
 + 39 \\
 \hline
 120 \\
 \text{■}15 \\
 \hline
 135
 \end{array}$$

$$\begin{array}{r}
 88 \\
 + 38 \\
 \hline
 110 \\
 \text{■}16 \\
 \hline
 126
 \end{array}$$