

十位計十掛算帳の使い方

①十の位の合計が10で一の位が同じ掛算、

例えば、

$$\begin{array}{r} 27 \leftarrow (6 \times 4 + 3) \\ + \quad 09 \leftarrow 3 \times 3 \\ \hline 2709 \end{array}$$

十の位同士 6×4 に一の位 3 を足した数
 と一の位 3×3 を二桁ずらして足す、
 これは $6 \times 4 + 3$ を100倍して足す事を
 意味します。

その原理を理解しましょう。

$6=a$ 、 $4=b$ 、 $3=c$ とすると

$$\begin{aligned} (10a+c) \times (10b+c) & 1 \leq a \leq 9 \\ = 10b(10a+c) + c(10a+c) & 1 \leq b \leq 9 \\ = 10b(10a+c) + 10ac + c^2 & 1 \leq c \leq 9 \\ = 100ab + 10bc + 10ac + c^2 \\ = 100ab + 10c(a+b) + c^2 & a+b = 10 \\ = 100ab + 100c + c^2 \\ = 100(ab+c) + c^2 \rightarrow 100 \times (6 \times 4 + 3) + (3 \times 3) \end{aligned}$$

②「十の位の合計が10で一の位が同じ」条件
 としてはかなり限定的ですが、九九2回だ
 けて横に並べるだけで計算完了です。
 条件をゆるくして使える範囲を広げます。
 例えば 63×41 なら、41に2足して43に
 し、計算した答えから 63×2 を引いて調整
 すればよい。

$$(63 \times (41+2)) + (63 \times \bar{2})$$

$\begin{array}{r} 27 \leftarrow (6 \times 4 + 3) \\ + \quad 09 \leftarrow 3 \times 3 \\ \hline 2709 \\ + \quad \overline{126} \leftarrow 63 \times \bar{2} \\ \hline 2583 \end{array}$	普通の筆算 $\begin{array}{r} 63 \\ \times 41 \\ \hline 63 \\ + 252 \\ \hline 2583 \end{array}$
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後で調整する数が大きくなると普通に筆算
 のほうが簡単ですが、本帳では一桁掛算の
 訓練も兼ねて以下の書式で練習します。

$$63 \times 41 = \begin{array}{r} 27 \\ 09 \end{array} \rightarrow \begin{array}{r} 2709 \\ \overline{126} \leftarrow 63 \times \bar{2} \end{array} = \boxed{2583}$$

③一の位が同じ条件さえ満たせば、十の位
 が合計10にならなくても同様の考え方
 で計算可能です。
 例えば 63×23 なら23に20足して43に
 して計算し、答えから 63×20 を引いて
 調整すればよい。

$$(63 \times (23+2 \times 10)) + (63 \times \bar{2} \times 10)$$

$\begin{array}{r} 27 \leftarrow (6 \times 4 + 3) \\ + \quad 09 \leftarrow 3 \times 3 \\ \hline 2709 \\ + \quad \overline{126} \leftarrow 63 \times \bar{2} \\ \hline 1449 \end{array}$	普通の筆算 $\begin{array}{r} 63 \\ \times 23 \\ \hline 189 \\ + 126 \\ \hline 1449 \end{array}$
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$$63 \times 23 = \begin{array}{r} 27 \\ 09 \end{array} \rightarrow \begin{array}{r} 2709 \\ \overline{126} \leftarrow 63 \times \bar{2} \end{array} = \boxed{1449}$$

注意：一桁ずらす

④右ページに左ページの解答が、左ページに
 右ページの解答があります。

- 補数——足すと10になる数
- 正の数——0より大きい数
- 負の数——0より小さい数
- 符号——0より大きい小さいかを示す記号
 正の数の符号は省略して表示しない
- 絶対値——0との差(符号を取り除いた数)
- 繰上げ——1増やす
- 繰下げ——1減らす



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次の答え	各10点	山折り
3381	$45 \times 65 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 45 \times 0 = \square \square \square \square$	<input type="checkbox"/>
2516	$29 \times 89 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 29 \times 0 = \square \square \square \square$	<input type="checkbox"/>
2464	$17 \times 97 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 17 \times 0 = \square \square \square \square$	<input type="checkbox"/>
3264	$81 \times 21 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 81 \times 0 = \square \square \square \square$	<input type="checkbox"/>
2709	$42 \times 62 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 42 \times 0 = \square \square \square \square$	<input type="checkbox"/>
2709	$95 \times 15 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 95 \times 0 = \square \square \square \square$	<input type="checkbox"/>
2809	$19 \times 99 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 19 \times 0 = \square \square \square \square$	<input type="checkbox"/>
3381	$17 \times 97 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 17 \times 0 = \square \square \square \square$	<input type="checkbox"/>

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前の答え	各10点	山折り
2925	$49 \times 69 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 49 \times 0 = \square \square \square \square$	<input type="checkbox"/>
2581	$34 \times 74 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 34 \times 0 = \square \square \square \square$	<input type="checkbox"/>
1649	$88 \times 28 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 88 \times 0 = \square \square \square \square$	<input type="checkbox"/>
1701	$68 \times 48 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 68 \times 0 = \square \square \square \square$	<input type="checkbox"/>
2604	$63 \times 43 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 63 \times 0 = \square \square \square \square$	<input type="checkbox"/>
1425	$63 \times 43 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 63 \times 0 = \square \square \square \square$	<input type="checkbox"/>
1881	$53 \times 53 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 53 \times 0 = \square \square \square \square$	<input type="checkbox"/>
1649	$49 \times 69 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 49 \times 0 = \square \square \square \square$	<input type="checkbox"/>

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次の答え	各10点	山折り
2256	$48 \times 65 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 48 \times \bar{3} = \square \square \square \square$	<input type="checkbox"/>
2304	$71 \times 31 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 71 \times 0 = \square \square \square \square$	<input type="checkbox"/>
1144	$49 \times 69 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 49 \times 0 = \square \square \square \square$	<input type="checkbox"/>
2501	$48 \times 70 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 48 \times \bar{8} = \square \square \square \square$	<input type="checkbox"/>
4875	$35 \times 75 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 35 \times 0 = \square \square \square \square$	<input type="checkbox"/>
2849	$84 \times 24 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 84 \times 0 = \square \square \square \square$	<input type="checkbox"/>
2516	$24 \times 82 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 24 \times \bar{2} = \square \square \square \square$	<input type="checkbox"/>
1209	$88 \times 29 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 88 \times 1 = \square \square \square \square$	<input type="checkbox"/>

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前の答え	各10点	山折り
3120	$24 \times 94 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 24 \times 1 = \square \square \square \square$	<input type="checkbox"/>
2201	$32 \times 72 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 32 \times 0 = \square \square \square \square$	<input type="checkbox"/>
3381	$22 \times 52 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 22 \times \bar{3} = \square \square \square \square$	<input type="checkbox"/>
3360	$41 \times 61 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 41 \times 0 = \square \square \square \square$	<input type="checkbox"/>
2625	$65 \times 75 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 65 \times 3 = \square \square \square \square$	<input type="checkbox"/>
2016	$37 \times 77 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 37 \times 0 = \square \square \square \square$	<input type="checkbox"/>
1968	$34 \times 74 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 34 \times 0 = \square \square \square \square$	<input type="checkbox"/>
2552	$93 \times 13 = \begin{array}{r} \square \square \\ \square \square \end{array} \rightarrow \begin{array}{r} \square \square \square \square \\ \square \square \square \square \end{array} \leftarrow 93 \times 0 = \square \square \square \square$	<input type="checkbox"/>