



Learn a new puzzle

Letter Sums

Each letter hides a digit. Crack the sum.

Trick: Start with the carry

1

$$\begin{array}{r}
 \text{D} \text{ E} \text{ S} \text{ K} \\
 + \text{D} \text{ E} \text{ S} \text{ K} \\
 \hline
 \text{S} \text{ U} \text{ N} \text{ N} \text{ Y}
 \end{array}$$

DESK + DESK has an extra letter, S. Two 4-digit numbers make at most 19998.

2

$$\begin{array}{r}
 \text{D} \text{ E} \text{ 1}_S \text{ K} \\
 + \text{D} \text{ E} \text{ 1}_S \text{ K} \\
 \hline
 \text{1}_S \text{ U} \text{ N} \text{ N} \text{ Y}
 \end{array}$$

So S = 1: the carry out of the top.

3

$$\begin{array}{r}
 \text{7}_D \text{ 6}_E \text{ 1}_S \text{ 4}_K \\
 + \text{7}_D \text{ 6}_E \text{ 1}_S \text{ 4}_K \\
 \hline
 \text{1}_S \text{ 5}_U \text{ 2}_N \text{ 2}_N \text{ 8}_Y
 \end{array}$$

Work from the ones with the carry: $7614 + 7614 = 15228$.

Try it

$$\begin{array}{r}
 \text{B} \text{ E} \text{ E} \\
 + \text{I} \text{ C} \text{ E} \\
 \hline
 \text{W} \text{ E} \text{ L} \text{ L}
 \end{array}$$

B = 8

I = 6

The answer is with the other answers.

Talk about it: Ask: Which letter did you find first, and why that one?



- ① **Letter Sums** Each letter hides a digit. Crack the sum. Same letter, same digit; different letters, different digits; no number starts with 0. ☆

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline M & O & P \\ \hline J & A & R \\ \hline \end{array} \\
 + \\
 \hline
 \begin{array}{|c|c|c|c|} \hline R & A & I & N \\ \hline \end{array}
 \end{array}$$

I = 0

J = 6

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Cross out the digits you use.

- ② **Letter Sums** Each letter hides a digit. Crack the sum. Same letter, same digit; different letters, different digits; no number starts with 0. ☆

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline P & A & N \\ \hline Z & I & P \\ \hline \end{array} \\
 + \\
 \hline
 \begin{array}{|c|c|c|c|} \hline L & A & M & P \\ \hline \end{array}
 \end{array}$$

M = 8

P = 5

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Cross out the digits you use.

- ③ **Letter Sums** Each letter hides a digit. Crack the sum. Same letter, same digit; different letters, different digits; no number starts with 0. ☆

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline M & A & P \\ \hline P & A & N \\ \hline \end{array} \\
 + \\
 \hline
 \begin{array}{|c|c|c|c|} \hline S & E & E & D \\ \hline \end{array}
 \end{array}$$

M = 7

P = 8

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Cross out the digits you use.

- ④ **Letter Sums** Each letter hides a digit. Crack the sum. Same letter, same digit; different letters, different digits; no number starts with 0. ☆

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline H & A & T \\ \hline N & A & P \\ \hline \end{array} \\
 + \\
 \hline
 \begin{array}{|c|c|c|c|} \hline H & O & M & E \\ \hline \end{array}
 \end{array}$$

P = 3

T = 9

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Cross out the digits you use.



- ⑤ **Letter Sums** Each letter hides a digit. Crack the sum. Same letter, same digit; different letters, different digits; no number starts with 0.



$$\begin{array}{r}
 \text{C} \text{ A} \text{ K} \text{ E} \\
 + \text{C} \text{ A} \text{ K} \text{ E} \\
 \hline
 \text{D} \text{ A} \text{ N} \text{ C} \text{ E}
 \end{array}$$

K = 8

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Cross out the digits you use.

- ⑥ **Letter Sums** Each letter hides a digit. Crack the sum. Same letter, same digit; different letters, different digits; no number starts with 0.



$$\begin{array}{r}
 \text{G} \text{ U} \text{ M} \\
 + \text{G} \text{ U} \text{ M} \\
 \hline
 \text{L} \text{ E} \text{ G}
 \end{array}$$

E = 0

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Cross out the digits you use.

- ⑦ **Letter Sums** Each letter hides a digit. Crack the sum. Same letter, same digit; different letters, different digits; no number starts with 0.



$$\begin{array}{r}
 \text{L} \text{ A} \text{ P} \\
 + \text{L} \text{ A} \text{ P} \\
 \hline
 \text{C} \text{ U} \text{ P}
 \end{array}$$

C = 4

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Cross out the digits you use.

- ⑧ **Letter Sums** Each letter hides a digit. Crack the subtraction. Same letter, same digit; different letters, different digits; no number starts with 0.



$$\begin{array}{r}
 \text{B} \text{ R} \text{ E} \text{ A} \text{ D} \\
 - \text{D} \text{ A} \text{ N} \text{ C} \text{ E} \\
 \hline
 \text{Q} \text{ U} \text{ E} \text{ E} \text{ N}
 \end{array}$$

B = 4

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Cross out the digits you use.



9

Letter Sums

Each letter hides a digit. Crack the subtraction. Same letter, same digit; different letters, different digits; no number starts with 0.



$$\begin{array}{r}
 \text{L E M O N} \\
 - \text{C L O W N} \\
 \hline
 \text{C R O W N}
 \end{array}$$

L = 9

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Cross out the digits you use.

10

Letter Sums

Each letter hides a digit. Crack the subtraction. Same letter, same digit; different letters, different digits; no number starts with 0.



$$\begin{array}{r}
 \text{W H E E L} \\
 - \text{H O R S E} \\
 \hline
 \text{H O U S E}
 \end{array}$$

O = 6

R = 9

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Cross out the digits you use.



Answers

 For grown-ups. Cut off or keep this page aside until the puzzles are done.

Learn · Letter Sums

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 8 & 5 & 5 \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 6 & 4 & 5 \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 1 & 5 & 0 & 0 \\ \hline \end{array}
 \end{array}$$

B = 8
I = 6

#1

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 5 & 8 & 3 \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 6 & 2 & 1 \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 1 & 2 & 0 & 4 \\ \hline \end{array}
 \end{array}$$

I = 0
J = 6

583 + 621 = 1204. R = 1: two numbers that short make at most a carry of 1 into the extra column.

#2

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 5 & 2 & 0 \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 7 & 6 & 5 \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 1 & 2 & 8 & 5 \\ \hline \end{array}
 \end{array}$$

M = 8
P = 5

520 + 765 = 1285. L = 1: two numbers that short make at most a carry of 1 into the extra column.

#3

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 7 & 2 & 8 \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 8 & 2 & 6 \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 1 & 5 & 5 & 4 \\ \hline \end{array}
 \end{array}$$

M = 7
P = 8

728 + 826 = 1554. S = 1: two numbers that short make at most a carry of 1 into the extra column.

#4

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 1 & 7 & 9 \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 8 & 7 & 3 \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 1 & 0 & 5 & 2 \\ \hline \end{array}
 \end{array}$$

P = 3
T = 9

179 + 873 = 1052. H = 1: two numbers that short make at most a carry of 1 into the extra column.

#5

$$\begin{array}{r}
 \begin{array}{|c|c|c|c|} \hline 6 & 2 & 8 & 0 \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|c|} \hline 6 & 2 & 8 & 0 \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|c|} \hline 1 & 2 & 5 & 6 & 0 \\ \hline \end{array}
 \end{array}$$

K = 8

6280 + 6280 = 12560. D = 1: two numbers that short make at most a carry of 1 into the extra column.

#6

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 4 & 5 & 2 \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 4 & 5 & 2 \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|} \hline 9 & 0 & 4 \\ \hline \end{array}
 \end{array}$$

E = 0

452 + 452 = 904. Start with the letters you know (E = 0) and work from the ones.

#7

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 2 & 3 & 0 \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 2 & 3 & 0 \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|} \hline 4 & 6 & 0 \\ \hline \end{array}
 \end{array}$$

C = 4

230 + 230 = 460. P = 0: P + P ends in P only when P is 0.

#8

$$\begin{array}{r}
 \begin{array}{|c|c|c|c|c|} \hline 4 & 6 & 2 & 0 & 1 \\ \hline \end{array} \\
 - \begin{array}{|c|c|c|c|c|} \hline 1 & 0 & 9 & 7 & 2 \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|c|} \hline 3 & 5 & 2 & 2 & 9 \\ \hline \end{array}
 \end{array}$$

B = 4

46201 - 10972 = 35229. Check it as an addition: DANCE + QUEEN = BREAD. Start with the letters you know (B = 4) and work from the ones. Check both cases for D (1 or 2): only 1 works.

#9

$$\begin{array}{r}
 \begin{array}{|c|c|c|c|c|} \hline 9 & 7 & 5 & 2 & 0 \\ \hline \end{array} \\
 - \begin{array}{|c|c|c|c|c|} \hline 4 & 9 & 2 & 6 & 0 \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|c|} \hline 4 & 8 & 2 & 6 & 0 \\ \hline \end{array}
 \end{array}$$

L = 9

97520 - 49260 = 48260. Check it as an addition: CLOWN + CROWN = LEMON. N = 0: N + N ends in N only when N is 0.

#10

$$\begin{array}{r}
 \begin{array}{|c|c|c|c|c|} \hline 7 & 3 & 4 & 4 & 8 \\ \hline \end{array} \\
 - \begin{array}{|c|c|c|c|c|} \hline 3 & 6 & 9 & 2 & 4 \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|c|} \hline 3 & 6 & 5 & 2 & 4 \\ \hline \end{array}
 \end{array}$$

O = 6
R = 9

73448 - 36924 = 36524. Check it as an addition: HORSE + HOUSE = WHEEL. Start with the letters you know (O = 6, R = 9) and work from the ones.