



Learn a new puzzle

Letter Sums

Each letter hides a digit. Crack the sum.

Trick: Start with the carry

1

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

YES + YES has an extra letter, S. Two 3-digit numbers make at most 1998.

2

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

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

3

$$\begin{array}{r} \text{5}_Y \text{0}_E \text{1}_S \\ + \text{5}_Y \text{0}_E \text{1}_S \\ \hline \text{1}_S \text{0}_E \text{0}_E \text{2}_D \end{array}$$

Work from the ones with the carry: $501 + 501 = 1002$.

Try it

$$\begin{array}{r} \text{M} \text{A} \text{T} \\ + \text{M} \text{U} \text{D} \\ \hline \text{D} \text{E} \text{S} \text{K} \end{array}$$

E = 7

S = 0

U = 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.



$$\begin{array}{r} \text{R} \text{U} \text{G} \\ + \text{K} \text{I} \text{T} \\ \hline \text{B} \text{O} \text{O} \text{K} \end{array}$$

$G = 6$

$U = 8$

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.



$$\begin{array}{r} \text{S} \text{I} \text{X} \\ + \text{B} \text{U} \text{S} \\ \hline \text{B} \text{I} \text{R} \text{D} \end{array}$$

$D = 2$

$R = 7$

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.



$$\begin{array}{r} \text{Z} \text{O} \text{O} \\ + \text{S} \text{E} \text{A} \\ \hline \text{L} \text{E} \text{G} \end{array}$$

$A = 1$

$E = 4$

$S = 5$

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.



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

$A = 0$

$B = 8$

$C = 7$

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.



$$\begin{array}{r}
 \text{D} \text{ A} \text{ Y} \\
 + \text{J} \text{ A} \text{ R} \\
 \hline
 \text{D} \text{ I} \text{ S} \text{ H}
 \end{array}$$

H = 3

Y = 9

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.



$$\begin{array}{r}
 \text{F} \text{ A} \text{ N} \\
 + \text{Y} \text{ A} \text{ M} \\
 \hline
 \text{P} \text{ O} \text{ P}
 \end{array}$$

F = 8

N = 3

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.



$$\begin{array}{r}
 \text{R} \text{ A} \text{ G} \\
 + \text{K} \text{ E} \text{ Y} \\
 \hline
 \text{E} \text{ G} \text{ G}
 \end{array}$$

G = 3

K = 7

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 sum. Same letter, same digit; different letters, different digits; no number starts with 0.



$$\begin{array}{r}
 \text{H} \text{ E} \text{ N} \\
 + \text{H} \text{ E} \text{ N} \\
 \hline
 \text{N} \text{ E} \text{ S} \text{ T}
 \end{array}$$

H = 8

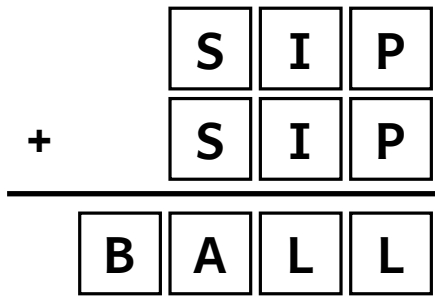
0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

Cross out the digits you use.



9

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



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

10

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



	D	R	U	M
+	D	R	U	M
	F	R	O	G

0 = 3

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

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Answers

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

Learn · Letter Sums

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 8_M & 4_A & 2_T \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 8_M & 6_U & 1_D \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 1_D & 7_E & 0_S & 3_K \\ \hline \end{array}
 \end{array}$$

E = 7
S = 0
U = 6

#1

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 7_R & 8_U & 6_G \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 5_K & 4_T & 9_T \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 1_B & 3_O & 3_O & 5_K \\ \hline \end{array}
 \end{array}$$

G = 6
U = 8

786 + 549 = 1335. B = 1: two numbers that short make at most a carry of 1 into the extra column.

#2

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 9_S & 0_X & 3_X \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 1_B & 6_U & 9_S \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 1_B & 0_X & 7_R & 2_D \\ \hline \end{array}
 \end{array}$$

D = 2
R = 7

903 + 169 = 1072. B = 1: two numbers that short make at most a carry of 1 into the extra column.

#3

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 2_Z & 9_O & 9_O \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 5_S & 4_E & 1_A \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|} \hline 8_L & 4_E & 0_G \\ \hline \end{array}
 \end{array}$$

A = 1
E = 4
S = 5

299 + 541 = 840. Start with the letters you know (A = 1, E = 4, S = 5) and work from the ones.

#4

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 9_W & 2_I & 3_N \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 7_C & 0_A & 8_B \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 1_T & 6_E & 3_N & 1_T \\ \hline \end{array}
 \end{array}$$

A = 0
B = 8
C = 7

923 + 708 = 1631. T = 1: two numbers that short make at most a carry of 1 into the extra column.

#5

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 1_D & 7_A & 9_Y \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 8_J & 7_A & 4_R \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 1_D & 0_X & 5_S & 3_H \\ \hline \end{array}
 \end{array}$$

H = 3
Y = 9

179 + 874 = 1053. D = 1: two numbers that short make at most a carry of 1 into the extra column.

#6

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 8_F & 2_A & 3_N \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 1_Y & 2_A & 6_M \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|} \hline 9_P & 4_O & 9_P \\ \hline \end{array}
 \end{array}$$

F = 8
N = 3

823 + 126 = 949. Start with the letters you know (F = 8, N = 3) and work from the ones.

#7

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 1_R & 4_A & 3_G \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 7_K & 9_E & 0_Y \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|} \hline 9_E & 3_G & 3_G \\ \hline \end{array}
 \end{array}$$

G = 3
K = 7

143 + 790 = 933. Start with the letters you know (G = 3, K = 7) and work from the ones.

#8

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 8_H & 7_E & 1_N \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 8_H & 7_E & 1_N \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 1_N & 7_E & 4_S & 2_T \\ \hline \end{array}
 \end{array}$$

H = 8

871 + 871 = 1742. N = 1: two numbers that short make at most a carry of 1 into the extra column.

#9

$$\begin{array}{r}
 \begin{array}{|c|c|c|} \hline 7_S & 8_I & 3_P \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|} \hline 7_S & 8_I & 3_P \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 1_B & 5_A & 6_L & 6_L \\ \hline \end{array}
 \end{array}$$

L = 6

783 + 783 = 1566. B = 1: two numbers that short make at most a carry of 1 into the extra column.

#10

$$\begin{array}{r}
 \begin{array}{|c|c|c|c|} \hline 2_D & 0_R & 1_U & 8_M \\ \hline \end{array} \\
 + \begin{array}{|c|c|c|c|} \hline 2_D & 0_R & 1_U & 8_M \\ \hline \end{array} \\
 \hline
 \begin{array}{|c|c|c|c|} \hline 4_F & 0_R & 3_O & 6_G \\ \hline \end{array}
 \end{array}$$

M = 8
O = 3

2018 + 2018 = 4036. R = 0: R + R ends in R only when R is 0.