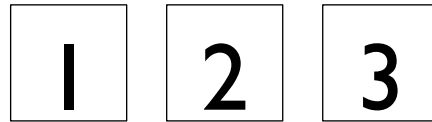


KS1 Problem

Addition Puzzle Part I

Using the following digit cards:



Place each card into one of the squares in the following addition number sentence and calculate the answer.

$$\square \square + \square =$$

e.g.

$$\square 2 \square 1 + \square 3 = 24$$

Write all the different additions that it is possible to make.

What is the largest total that you can make?

What is the smallest total that you can make?

Challenge

What about if you included this digit card as well:



Write all the different additions that it is possible to make.

What is the largest total that you can make?

What is the smallest total that you can make?

Support for Parents and Carers

Ensure your child understands the term 'total'. A total is the result of adding two numbers together.

Encourage your child to be methodical when trying to make all the possible additions. For example, when using the 1, 2 and 3 digit cards a logical starting point would be to

KS1 Problem

use the smallest number (1) and add this to a two-digit number made from the other two digit cards, i.e.

$$23 + 1 = 24$$

$$32 + 1 = 33$$

The next logical additions to make would use the 2 digit card added to a two-digit number made from the other two digit cards, i.e.

$$13 + 2 = 15$$

$$31 + 2 = 33$$

The final additions to make would use the 3 digit card added to a two-digit number made from the other two digit cards, i.e.

$$12 + 3 = 15$$

$$21 + 3 = 24$$

We can now see the largest total that can be made is 33 and the smallest total that can be made is 15.

Solutions

$23 + 1 = 24$ $32 + 1 = 33$	$13 + 2 = 15$ $31 + 2 = 33$	$12 + 3 = 15$ $21 + 3 = 24$
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Largest total is 33
Smallest total is 15

Challenge Solution

$23 + 1 = 24$ $32 + 1 = 33$ $24 + 1 = 25$ $42 + 1 = 43$ $34 + 1 = 35$ $43 + 1 = 44$	$13 + 2 = 15$ $31 + 2 = 33$ $14 + 2 = 16$ $41 + 2 = 43$ $34 + 2 = 36$ $43 + 2 = 45$	$12 + 3 = 15$ $21 + 3 = 24$ $14 + 3 = 17$ $41 + 3 = 44$ $24 + 3 = 27$ $42 + 3 = 45$	$12 + 4 = 16$ $21 + 4 = 25$ $13 + 4 = 17$ $31 + 4 = 35$ $23 + 4 = 27$ $32 + 4 = 36$
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Largest total is 45 ($43 + 2$ or $42 + 3$)
Smallest total is 15 ($13 + 2$ or $12 + 3$)