Five cards

Written by Liz Gibbs

Five cards

Here are five digit cards. They are face down, so you can't see the number written on them.

The **red** and **blue** stand for *two different* whole numbers.

The sum of all the cards is 30.

What could the values of the red and blue cards be?

Five cards

This problem lends itself to a bar model.

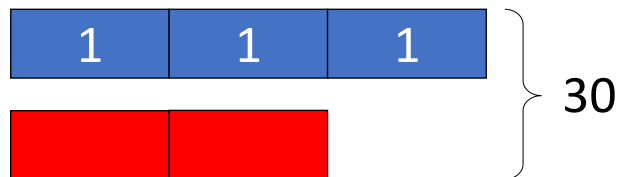A bar model helps you to visualize the number problem as a picture or series of bars.

Using trial and improvement, fill the blue boxes with a number. Subtract this from 30 and divide the answer by 2.

The total of the blue cards must be an even number. Why?

Five cards

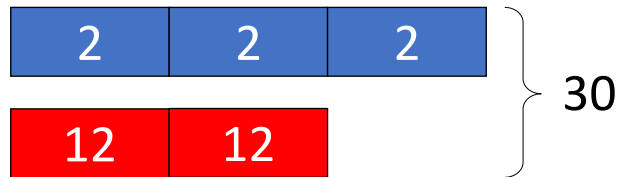Let's try 1 in each of the blue boxes.

1	1	1

30

30 – 3 = 27

You cannot divide 27 by 2 and have a whole number as the answer.

Five cards

Let's be systematic and try 2 in each of the blue boxes.

2	2	2

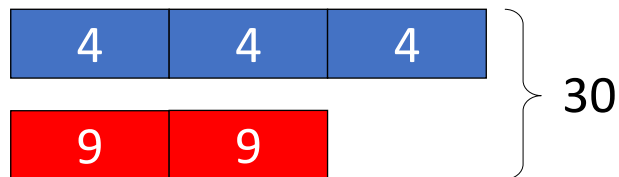| 12	12

30

$30 - 6 = 24$

$24 \div 2 = 12$

Check by adding the red and blue cards together.

$2 + 2 + 2 + 12 + 12 = 30$

Blue = 2
Red = 12

Five cards

Let's try another even number and put 4 in each of the blue boxes.

4	4	4

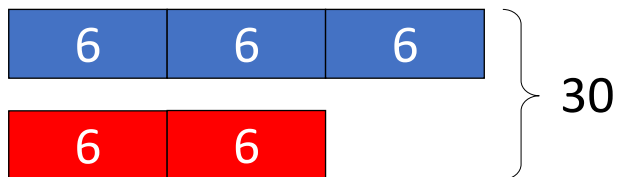| 9	9

30

$30 - 12 = 18$

$18 \div 2 = 9$

Check by adding the red and blue cards together.

$4 + 4 + 4 + 9 + 9 = 30$

Blue = 4
Red = 9

Five cards

Let's try another even number and put 6 in each of the blue boxes.
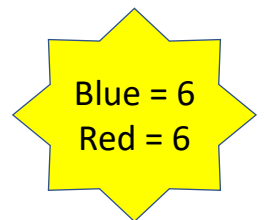
6	6	6

6	6

30

30 − 18 = 12
12 ÷ 2 = 6

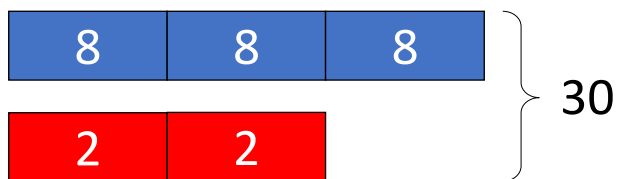Check by adding the red and blue cards together.
6 + 6 + 6 + 6 + 6 = 30
This works but it isn't one of the possibilities. Why?

Blue = 6
Red = 6

Five cards

Let's try another even number and put 8 in each of the blue boxes.

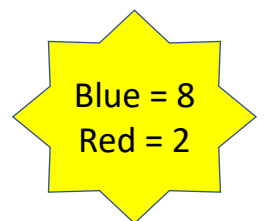| 8	8	8

2	2

30

30 − 24 = 6
6 ÷ 2 = 2

Check by adding the red and blue cards together.
8 + 8 + 8 + 2 + 2 = 30

Blue = 8
Red = 2

Five cards

Here are all the possibilities

| 2 | 2 | 2 | 12 | 12 |

| 4 | 4 | 4 | 9 | 9 |

| 8 | 8 | 8 | 2 | 2 |