29.06.22

Exploring four consecutive numbers

1. 31
32
33
30

30 × 4 = 120
1 + 2 + 3 + 6 = 10

2. -8
-9
-10
-11

0 + 1 + 2 + 3 = 6

38 - 6 = 32
32 ÷ 8 = 4

8 + 0 = 8
8 + 1 = 9
8 + 2 = 10
8 + 3 = 11

First I used common knowledge to know that 1 + 2 + 3 = 6, and then to add a fourth number, 0 + 1 + 2 + 3 = 6. 38 - 6 is 32 which is divisible by 4 to get 8. I added each of the numbers to recieve 6 to each 8 that made 32.
8 + 0 = 8
8 + 1 = 9
8 + 2 = 10
8 + 3 = 11
And tested it out to recieve 38. Two negative numbers add together to produce another negative number so I just converted 8, 9, 10 and 11 to -8, -9, -10 and -11 to get -38.

3. 1 2 3 4 — difference of 2
(1 + 2 + 3 = 6)

2 3 4 5 — difference of 4
(2 + 3 + 4 = 9)

3 4 5 6 — difference of 6

4 5 6 7 — difference of 8
(4 + 5 + 6 = 15)

5 6 7 8 — difference of 10

Every time you go forward by 1 in a set of 4 consecutive numbers, there is a difference of 2. If the 1st set (1 2 3 4) is 2, the 5th would have a difference of 10.

5 + 6 + 7 = 18. 18 - 8 = 10

3. (a + d) - (b + c) = 0
(a + d) = (b + c)

(1 + 4) - (2 + 3) = 0
(2 + 5) - (3 + 4) = 0

If you were to replace a, b, c and d with any 4 consecutive numbers, like
a = 5
b = 6
c = 7
d = 8
then a + d will always be equal to b + c, and to minus one from the other always leaves us with 0.

5 + 8 = 13
6 + 7 = 13
13 - 13 = 0

4. a + b + c - d

1 + 2 + 3 ÷ 4 = 2
(1 + 2 + 3 = 6)

2 + 3 + 4 - 5 = 4
(2 + 3 + 4 = 9)

3 + 6 + 5 - 6 = 6
(3 + 6 + 5 = 12)

Same rule as number 3's explanation

a + b + c - d = -d + a + b + c
c - d = -1

Aroosa