

130  
 $\sqrt[4]{32, 33, 34}$   
 $\sqrt[4]{38, 9, 10, 11}$

First divided the total of all the numbers by 4 then estimated the 4 numbers around it

(a, b, c, d)  
 $10+d$   
~~2, 3, 4, 5~~ - too small  
~~8, 9, 10, 11~~ - too big

I did some trial and error and did the one that was too small than too big so I could narrow it down then I found the middle

(a+d) - (b+c)  
~~(a+a+3) - (b+b+1)~~  
 $(7+10) - (8+9) = 17 - 17 = 0$   
 $(a+a+3) - (b+b+1) = (2a+3) - (2b+1) = 0$

a+b+c-d = ~~7, 8, 9, 10~~  
 $1+2+3 = 6$   
 $6-4 = 2$   
 $2+3+4 = 9$   
 $9-5 = 4$   
 $3+4+5 = 12$   
 $12-11 = 1$   
 $a+1+2 = 3$   
 $3a+3 - (a+3) = 2a$

Kaia

1. a) 3, 1, 3, 2, 3, 3, 3, 4  
 b) -8, -9, -10, -11

I used trial and error and based previous answers to find the next possible sequence.

2. 7, 8, 9, 10  
 6, 7, 8, 9  
 5, 6, 7, 8 → this one works

$3. (7+10) - (8+9) = 17 - 17 = 0$

4.  $a+b+c-d$   
 17, 18, 19, 20  
 $54 - 20 = 34$

Algebraically  
 $a = a, b = a+1, c = a+2, d = a+3$   
 $a+(a+1)+(a+2) - (a+3) = 3a+3 - (a+3) = 2a$

didn't finish

$(4+7) - (5+6) = 11 - 11 = 0$   
 it always ends with 0.

Algebraically  
 $a = a, b = a+1, c = a+2, d = a+3$   
 $(a+(a+3)) - ((a+1)+(a+2)) = 2a+3 - 2a+3 = 0$

The pattern that I've observed is that the smallest and biggest number subtracted from the 2 middle numbers will always equal 0.

Veeral