How to make calculations using a number line

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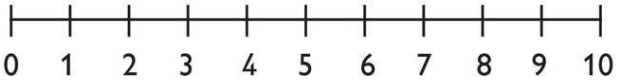
Number line

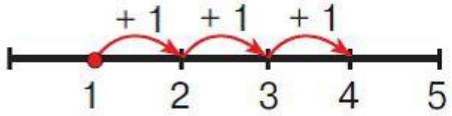
The number line is very similar to a ruler.

The number line is the line on which the following are selected:

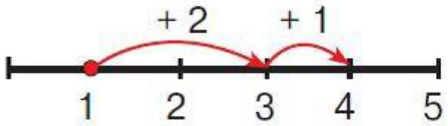
- some point O - the origin;
- positive direction (the opposite direction is called negative);
- scale, that is, a unit of measure for lengths.



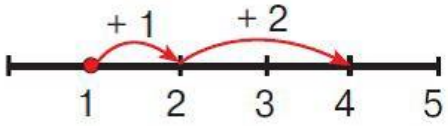
Solving examples using the number line. Addition.



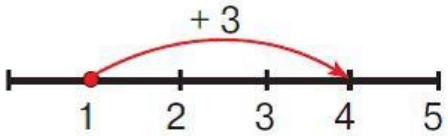
1 + 1 + 1 + 1



1 + 2 + 1

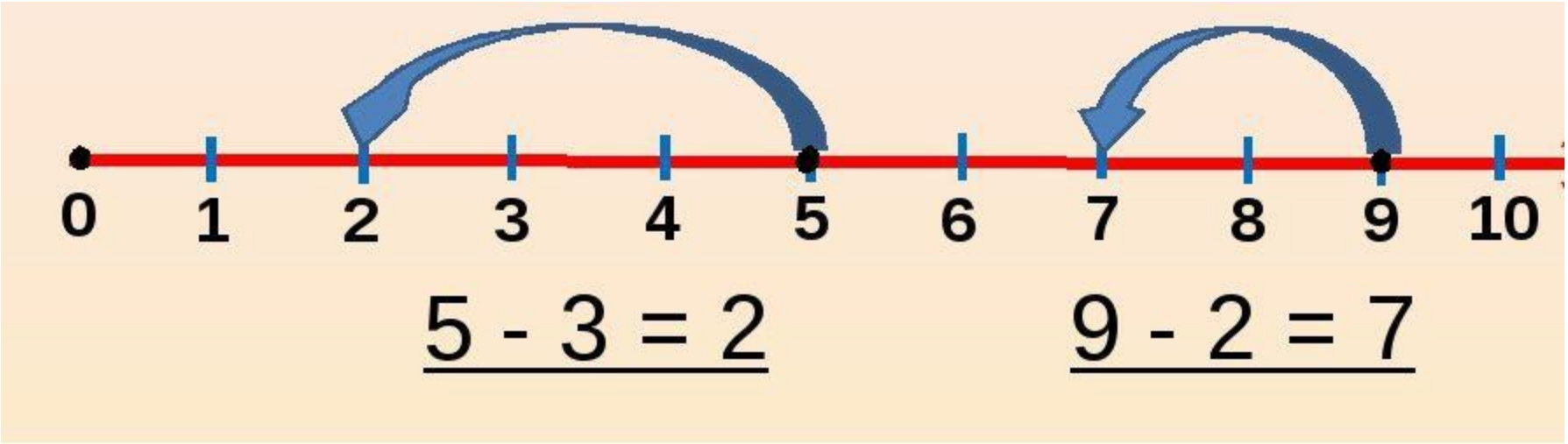


1 + 1 + 2

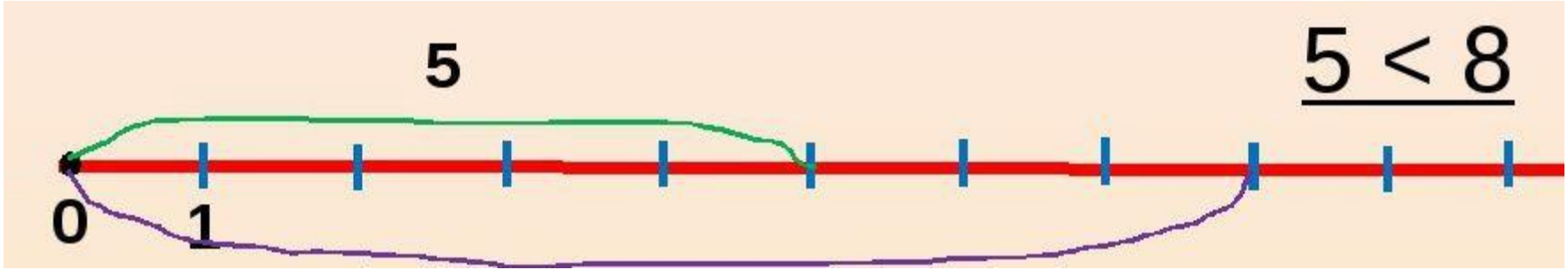


1 + 3

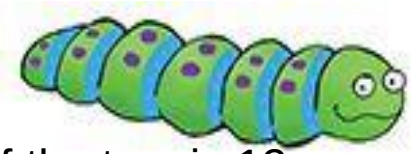
Solving examples using the number line. Subtraction.



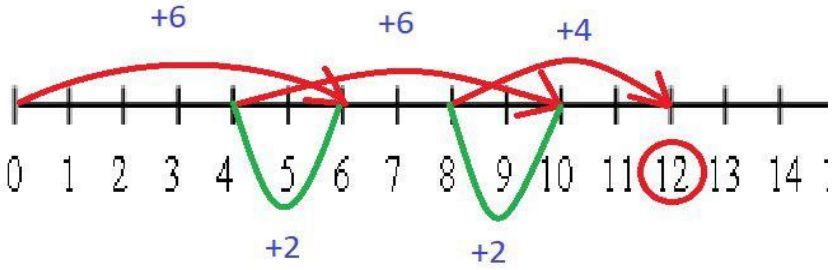
Solving examples using the number line. Comparison.



Problem solving using the number line.

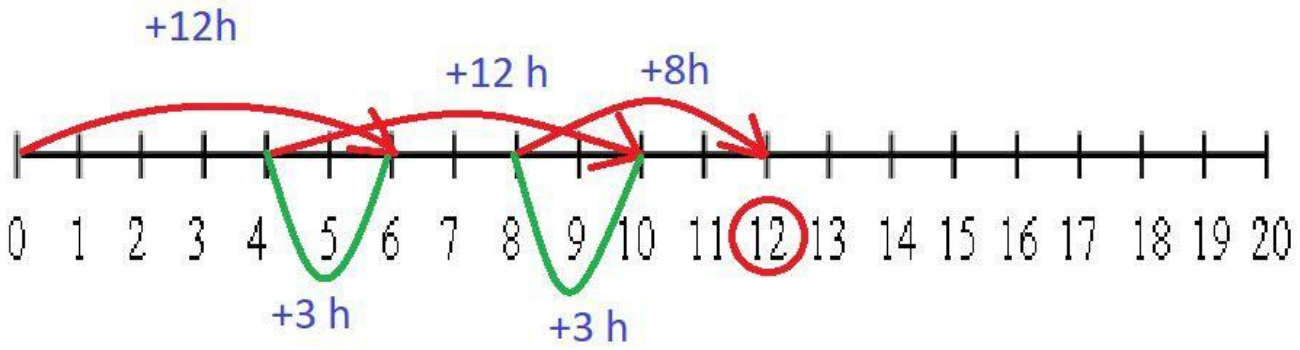


The caterpillar began to crawl on June 30 at six o'clock. The height of the tree is 12 m. In 12 hours, caterpillar rose to a height of 6 meters and stopped to rest. But her weight pulled her down, and the caterpillar on the cobwebs went down 2 m down the trunk. She spent 3 hours on it. After resting, the caterpillar again crawled 6 meters in 12 hours, rested like the first time and continued on its way. When will the caterpillar reach her destination (date and hour)? How many meters has the caterpillar crawled towards her secret place?



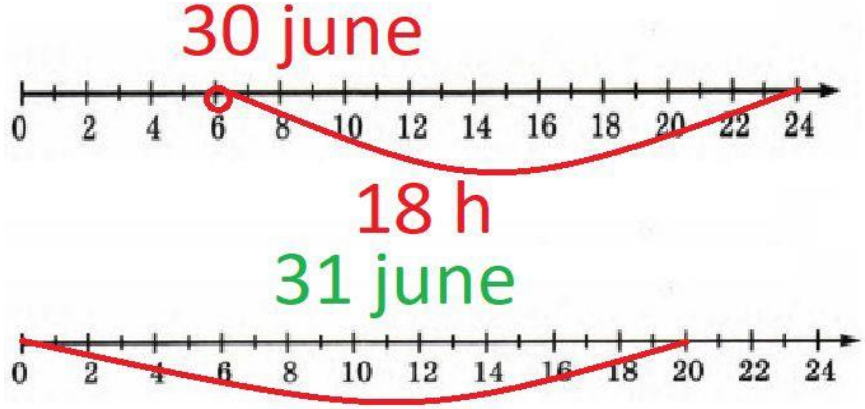
0+6+2+6+2+4=20 meters

Travel time



0+12+3+12+3+8 = 38 h = 1 d 14 h

Arrival day.



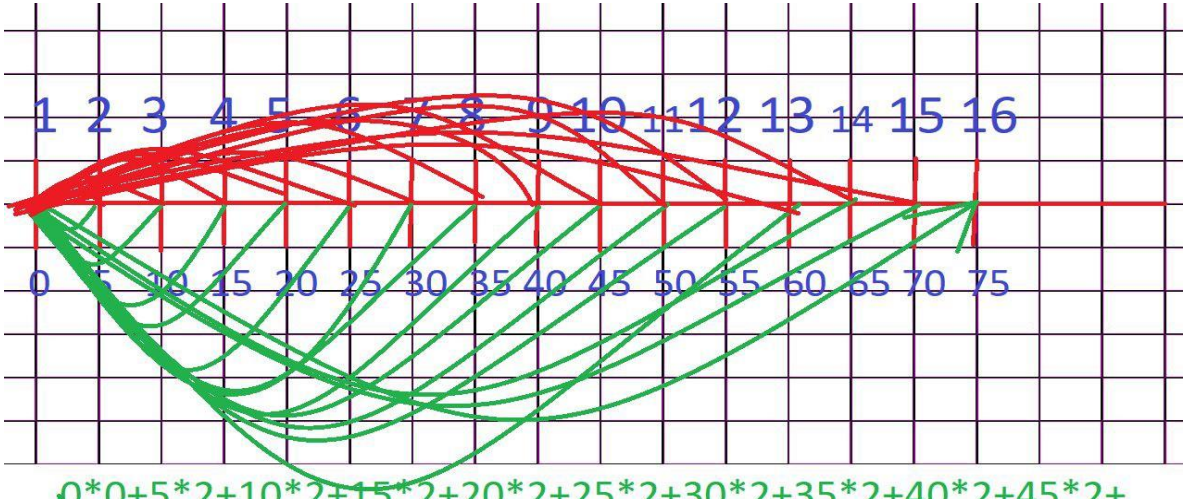
38-18 = 20 h

start in 30 june 6 hours

finish in 31 june 20 hours

The tree problem

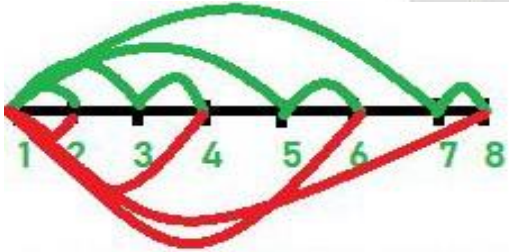
16 trees were planted in one row at a distance of 5 m from each other. There is a well next to the last tree. Watering one tree requires 1 bucket of water. How long is the path to travel to water all the trees and return to the well? Use the number line to solve



0*0+5*2+10*2+15*2+20*2+25*2+30*2+35*2+40*2+45*2+
50*2+55*2+60*2+65*2+70*2 = 1200 m.

Another tree problem

8 trees planted . Distance from each other 5 meters . With 1 basket of water you can watering 2 trees. what distance you arrive to watering all trees?



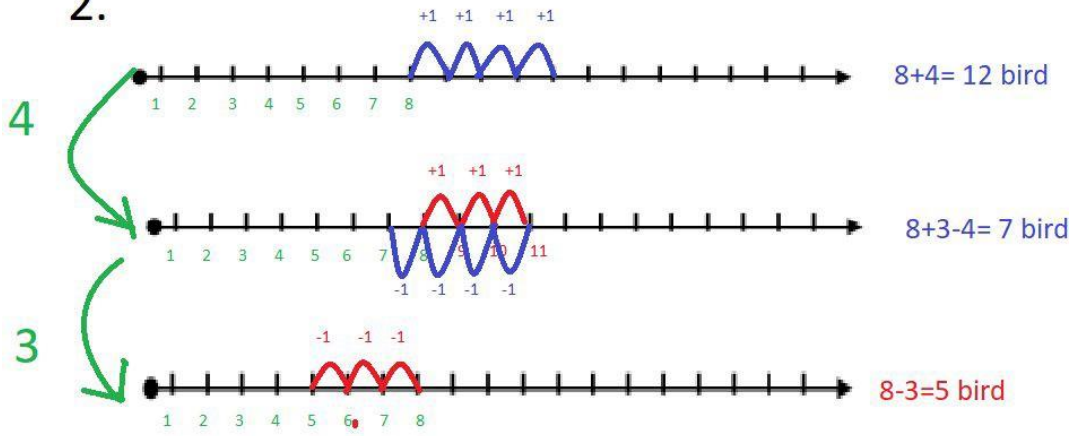
0+5+5+10+5+15+20+5+25+30+5+35=160

Bird problem

1. There were 24 sparrows on three wires. After 4 sparrows flew from the first wire to the second, and 3 sparrows from the second to the third, there were the same number of sparrows on all the wires. How many sparrows were originally on each wire? Draw the diagram and solve the task.

1. 24/3=8 bird

2.



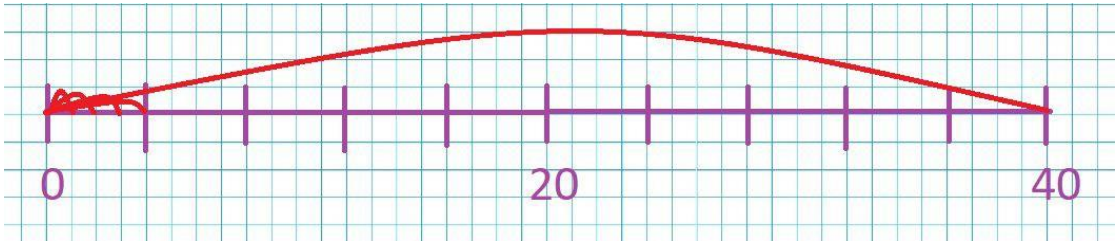
The problem about the dog and the hare

Between a hare and a dog 40 meters. One jump of a hare is 1 meter; one jump of a dog is 2 meters. How many jumps will the dog make to catch the hare?

Let's say that the hare stands still, then:

jumps 0 meters

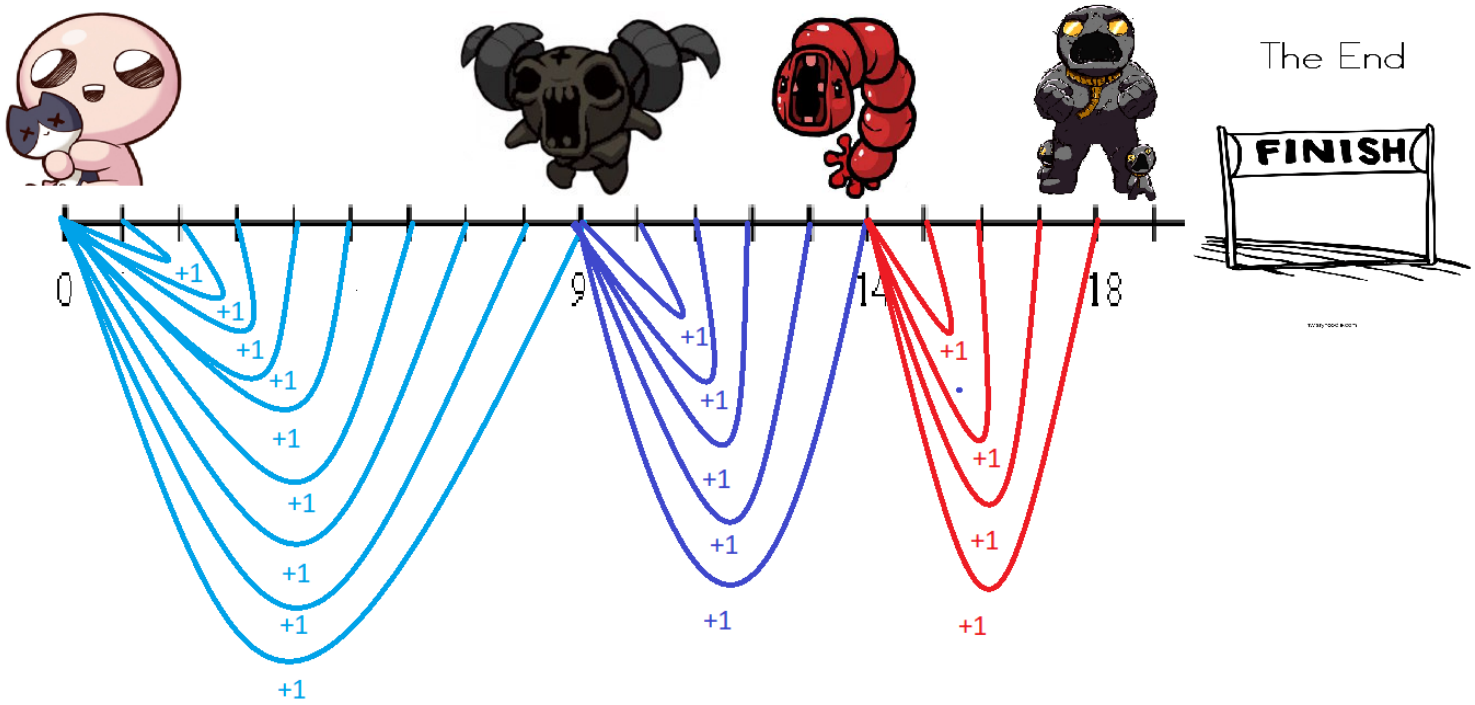
jumps 2-1 = 1 meter



Isaac challenge

Isaac moves one square per turn. The first Bose is 9 cells from Isaac, the second Boss is 5 cells from the first, and the third one is 4 cells from the second. How many moves does Isaac need to defeat all the Bosses?

The solution of the problem



0+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1=18 Moves

Conclusion

On the number line, you can depict sets of natural, negative and fractional numbers. With the number line, you can add and subtract, compare numbers.