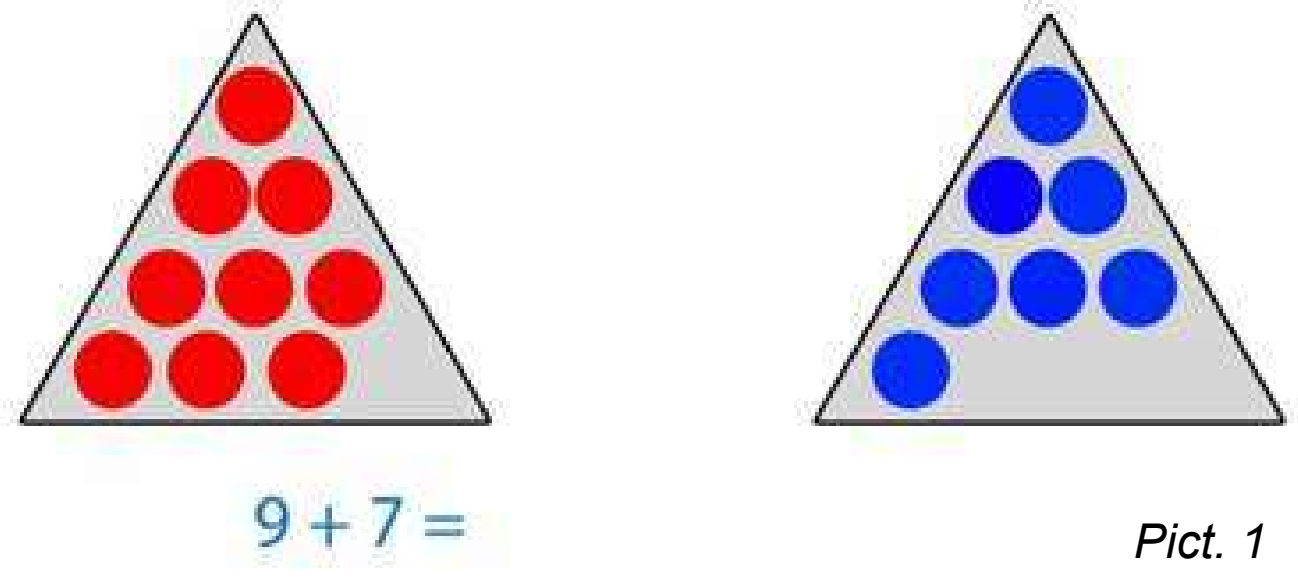
LEARNING TO ADD AND SUBTRACT SINGLE DIGITS WITH A TRANSITION THROUGH A DOZEN

Addition of single digits with transition through ten

To add single-digit numbers with the transition through ten, you need to add one of the terms to ten, and then add the remaining units. With the help of a graphical model it is possible to explain the addition of single digits with the transition through a dozen.

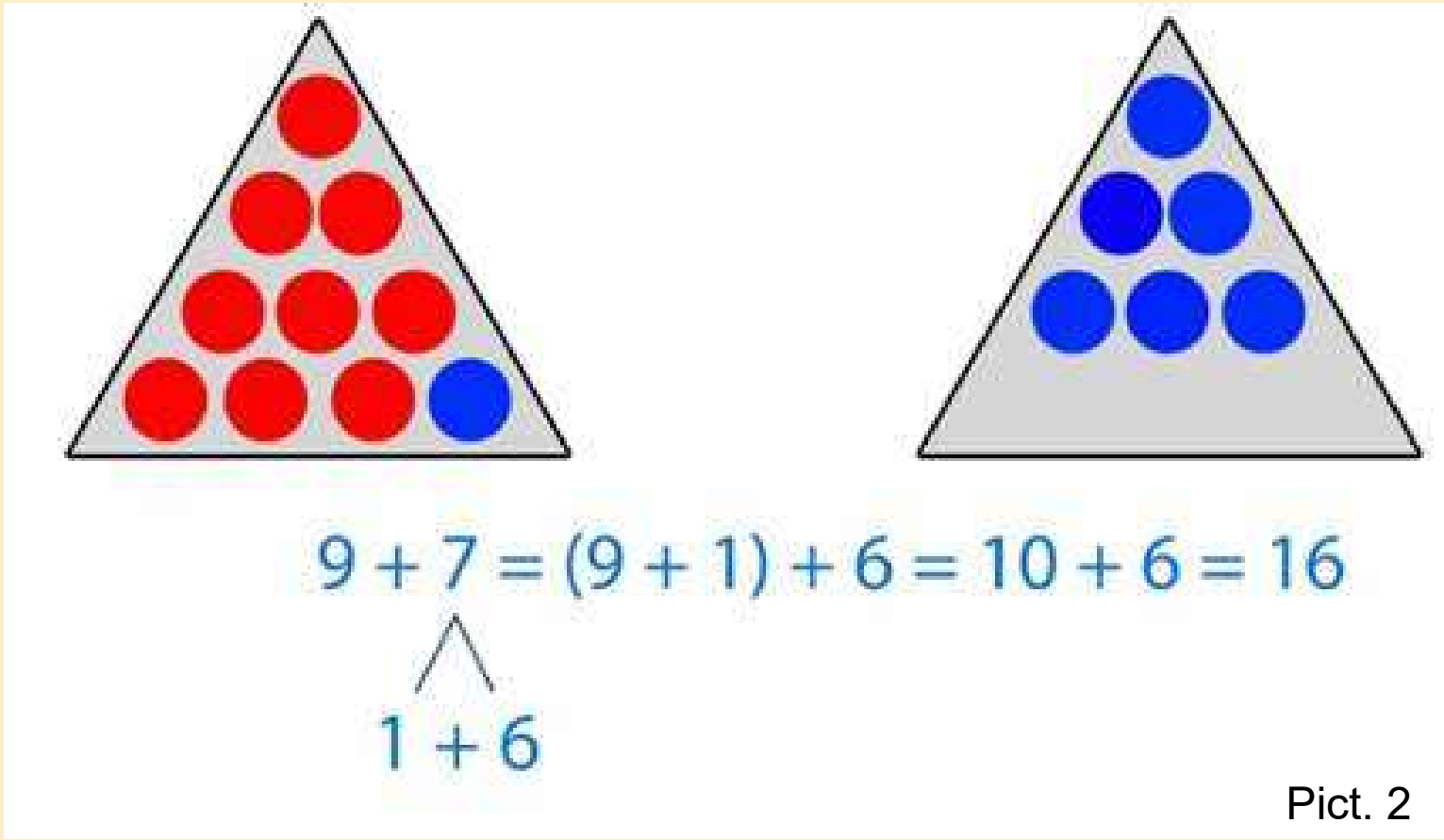


Pict. 1

How can you add 9 and 7? (pict. 1)

The graphical model shows that the first term 9 must be supplemented to 10. To do this, we divide the second term into two parts, one of which is equal to the number 1, since

9 + 1 = 10, so 7 = 1 + 6. (pict. 2)



Pict. 2

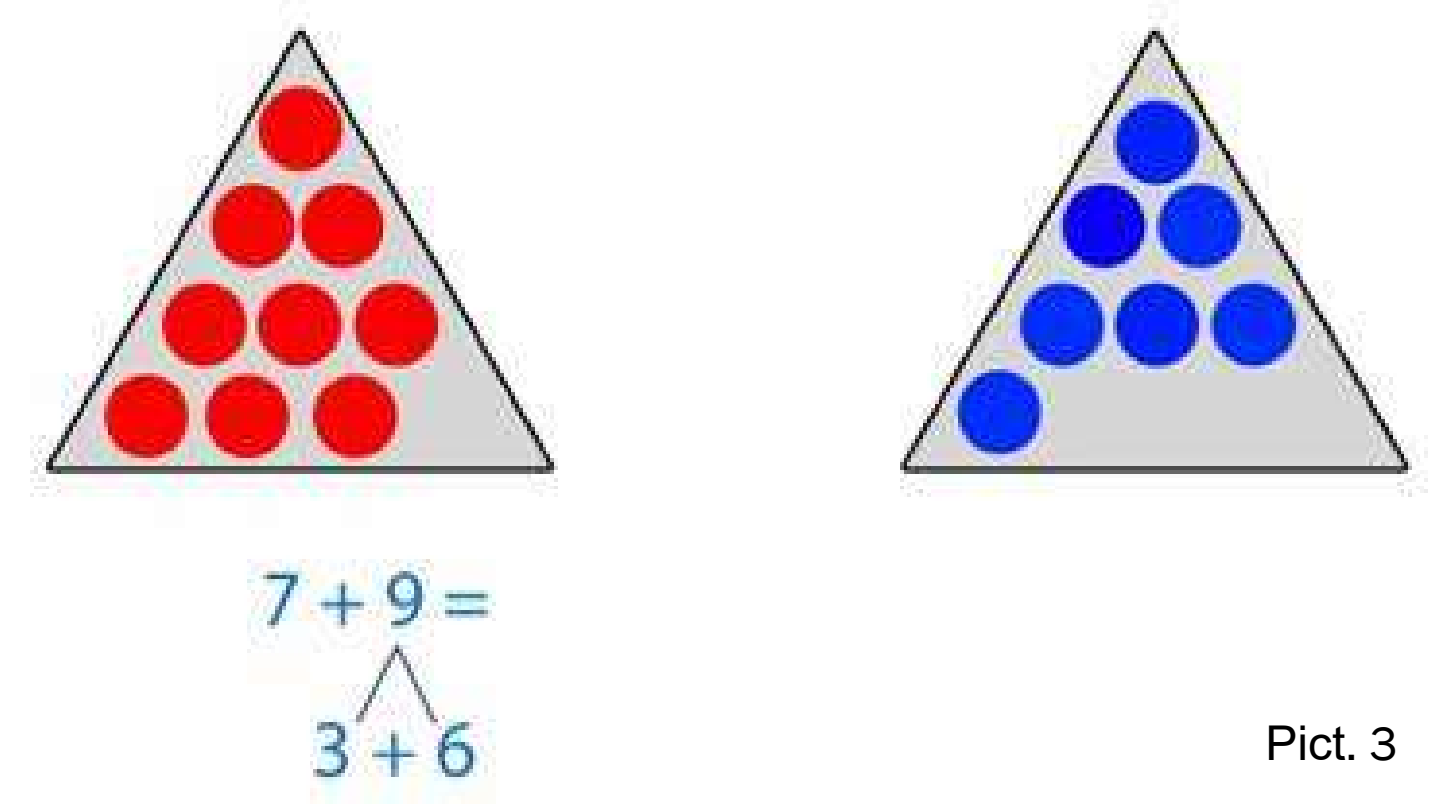
Let's perform addition in parts:

9 + 7 = (9 + 1) + 6 =

= 10 + 6 = 16

Answer: 9 + 7 = 16.

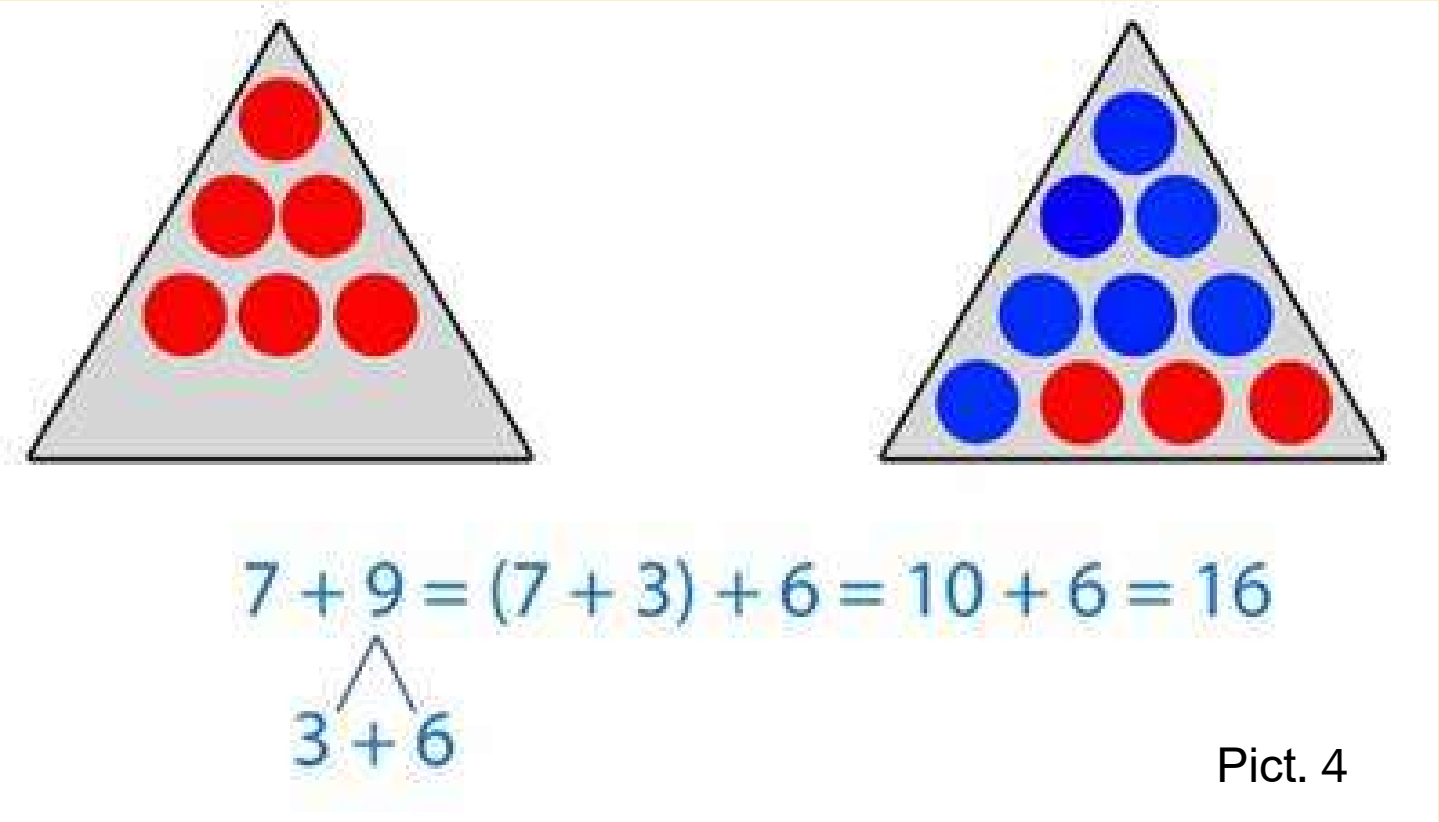
You can add these numbers in a different way. (pict. 3)



Pict. 3

The second summand 7 can be supplemented to 10. To do this, the first summand is divided into two parts, one of which is equal to the number 3.

Hence, 9 = 3 + 6.



Pict. 4

Let's perform addition in parts (pict. 4):

7 + 9 = (7 + 3) + 6 = 10 + 6 = 16

Answer: 7 + 9 = 16

Examples of addition of single digits with transition through ten

EXAMPLE 1.

9 + 5

The first term is 9, it lacks up to 10 one unit, so the second term is broken into parts. 5 is 1 and 4. Add to 9 first one unit, and then the remaining four units.

9 + 5 = 9 + (1 + 4) = 14

Answer: 9 +5 = 14

EXAMPLE 2.

6 + 6

The first term is 6, it lacks up to 10 four units, so the second term is divided into parts: 4 and 2. Add to 6 first 4 and get ten units, and then the remaining two units.

6 + 6 = 6 + (4 + 2) = 12

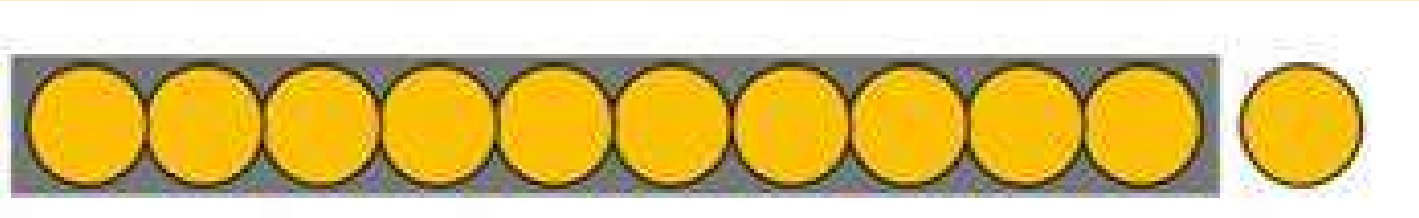
Answer: 6 + 6 = 12

Subtraction of single digits with transition through ten

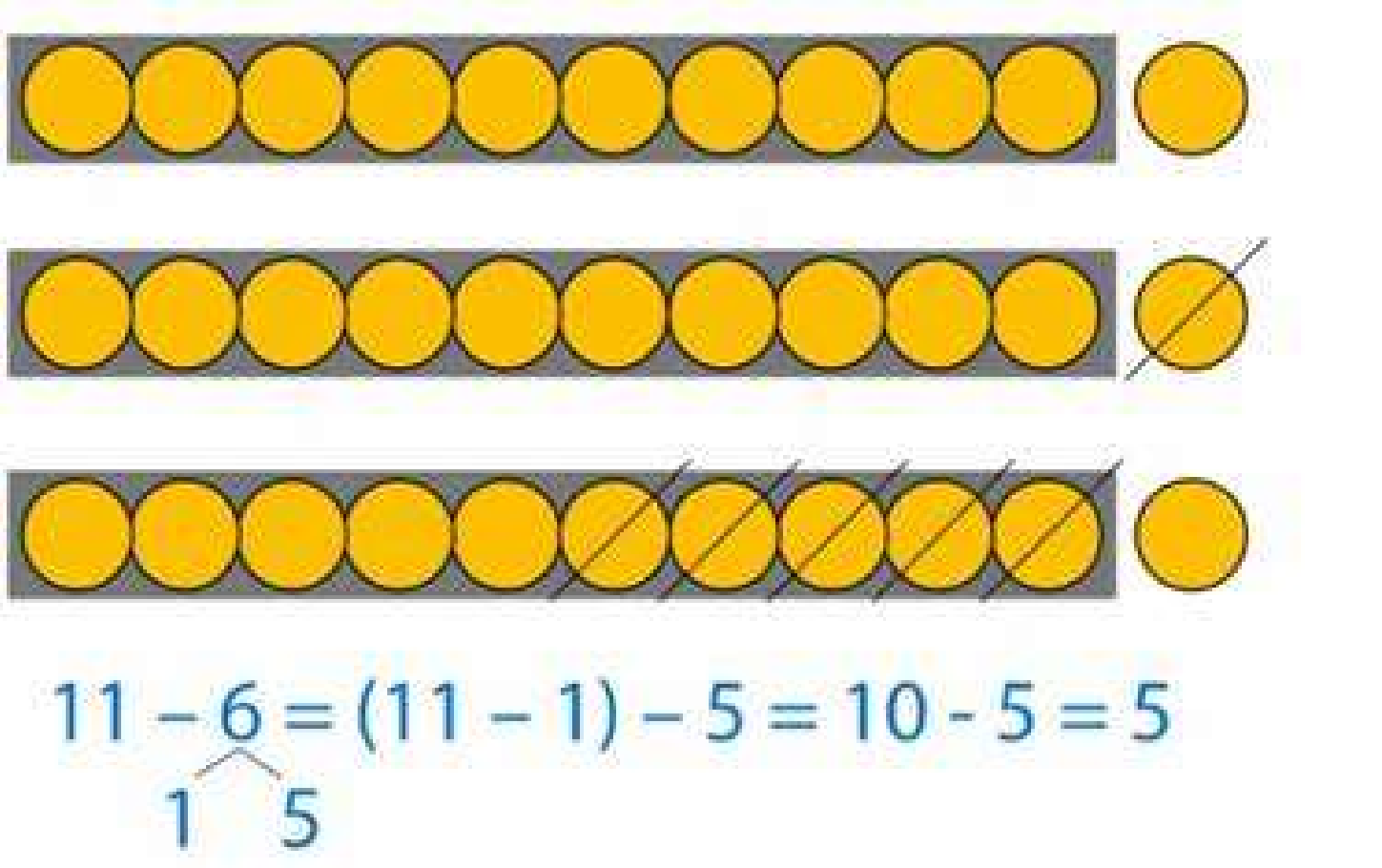
To perform a subtraction with the transition through the ten in parts, you need to determine the number of units in the reduced and divide the subtraction into two parts, one of which is equal to the number of units. And then perform the subtraction in parts. With the help of a graphical model, it is possible to explain the subtraction of a single-digit number from a two-digit number to 20.

Example: 11 – 6

In the diminutive 11 one dozen and one unit.



Subtracted 6 is divided into parts: 1 and 5. Subtract first from 11 one unit, get 10, and then from 10 subtract the remaining five units.



Answer: 11 – 6 = 5

Examples of subtraction of single digits with a transition through a dozen

EXAMPLE 1.

15 – 7In the reduced 15-five units, so the subtracted 7 is divided into parts: 5 and 2. Subtract from 15 first five units, get 10. Then from ten subtract the remaining two units.

15 – 7 = 15 – (5 + 2) = 8

Answer: 15 – 7 = 8

EXAMPLE 2.

16 – 9In the reduced 16-six units, so the subtracted 9 is divided into parts: 6 and 3. Subtract the first six of the 16 units, you get 10. And then from 10 subtract the remaining three units.

16 – 9 = 16 – (6 + 3) = 7

Response: 16 – 9 = 7

Using the method of addition and subtraction in parts with the transition through the dozen is not always convenient, so you need to learn the addition table of single digits up to 20 by heart.

The figure shows a table with which it will be easier to learn the cases of addition of single digits to 20.

9 + 2 =	8 + 3 =	7 + 4 =	6 + 5 =	
9 + 3 =	8 + 4 =	7 + 5 =	6 + 6 =	
9 + 4 =	8 + 5 =	7 + 6 =		
9 + 5 =	8 + 6 =	7 + 7 =		
9 + 6 =	8 + 7 =			
9 + 7 =	8 + 8 =			
9 + 8 =				
9 + 9 =				

In each column, the first term is the same, and the second – increases by one, so the sum will also increase by one. Find the value of these sums.

9 + 2 = 11, therefore: 9 + 3 = 12, reasoning so, fill the entire table.

9 + 2 = 11	8 + 3 = 11	7 + 4 = 11	6 + 5 = 11	11
9 + 3 = 12	8 + 4 = 12	7 + 5 = 12	6 + 6 = 12	12
9 + 4 = 13	8 + 5 = 13	7 + 6 = 13		13
9 + 5 = 14	8 + 6 = 14	7 + 7 = 14		14
9 + 6 = 15	8 + 7 = 15			15
9 + 7 = 16	8 + 8 = 16			16
9 + 8 = 17				17
9 + 9 = 18				18

Each line contains sums with the same answers. If it is good to learn the table of addition of single digits to 20, it will be easy to perform and subtraction of single digits within 20.