Place Value. Rays and segments

1 Find the results without calculations:

42 + 17 − 17 =   57 + 24 − 24 =   63 − 18 + 18 =

29 + 14 − 14 =   68 + 19 − 19 =   72 − 49 + 49 =

27 + 46 − 46 =   19 + 34 − 34 =   87 − 39 + 39 =

2 Fill in the diagrams for the equations, solve them, and check your answers.

| x | - | 1 | 2 | = | 5 |

| 1 | 3 | - | x | = | 1 | 1 |

3 Perform the operations:

add a circle → ? : $\triangle\triangle$
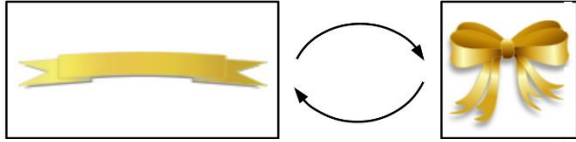
add "s" → ? : cat

+ 4 → ? : 12

−7 → ? : 15

4 **Inverse operation** is the operation that reverses the effect of another operation.

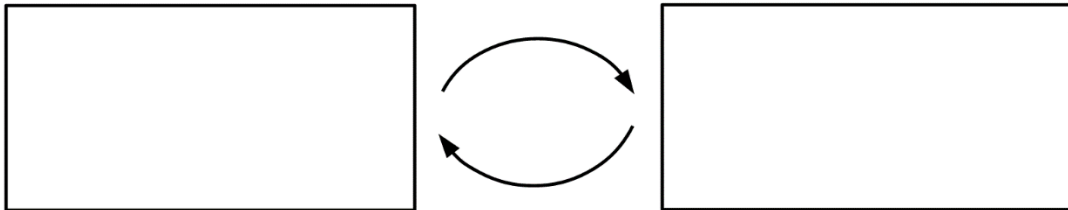What did a chef do to these vegetables?

Does this operation have an inverse one? _____

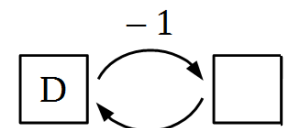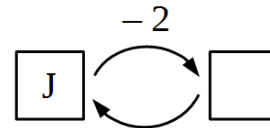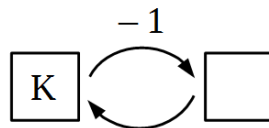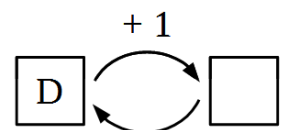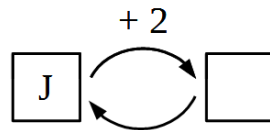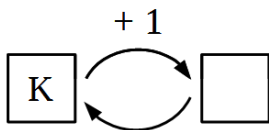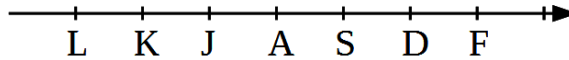Which operation was performed on the ribbon?

Does this operation have an inverse one? _____

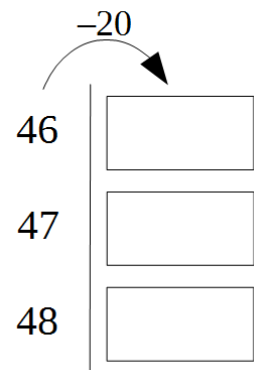Give your own example of an operation. Does your operation have an inverse one?

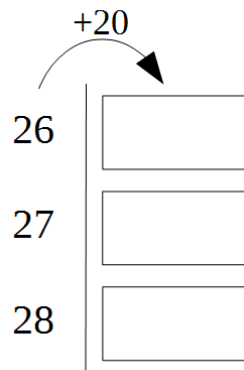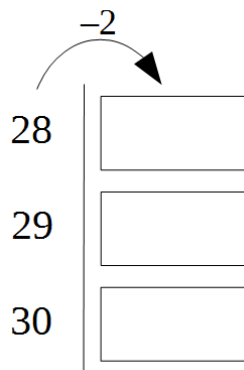**5** Do the operations using the line (note that K− L=1):

L   K   J   A   S   D   F

+ 1
K ⟳ ☐

+ 2
J ⟳ ☐

+ 1
D ⟳ ☐

− 1
K ⟳ ☐

− 2
J ⟳ ☐

− 1
D ⟳ ☐

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6 Compare the results of the arithmetic operations below. What do you notice?

+2		−2		+20		−20	
26		28		26		46	
27		29		27		47	
28		30		28		48	
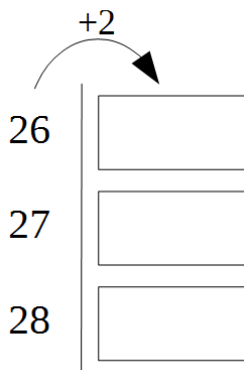
Place value and column addition with regrouping

• = 1 (ones)   △ = ▲ = 10 (tens)

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7 Transform to the numbers:

△ = ___   △ = ___   ▲△ = ___

△ = ___   ▲△ = ___   ▲▲△ = ___

▲ = ___   ▲△ = ___   ▲▲△ = ___

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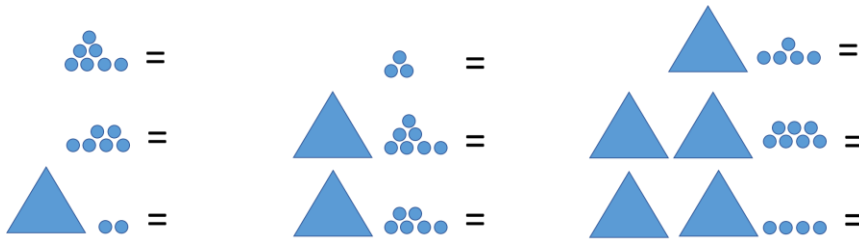
8 Present as tens and ones:

$34 = \square\ t + \square\ o = 30 + 4 =$ _____ $75 = \square\ t + \square\ u =$ _____

$41 = \square\ t + \square\ o =$ _____ $62 = \square\ t + \square\ u =$ _____

$15 = \square\ t + \square\ o =$ _____ $29 = \square\ t + \square\ u =$ _____

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9 Calculate using the regrouping:
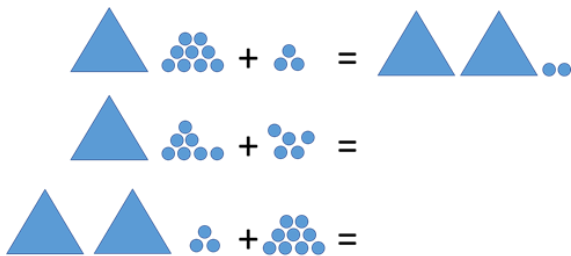
▲ + • = ▲▲ $15 + 6 = 10 + 5 + 5 + 1 =$

▲ + • = $18 + 4 =$

▲▲ + • = $13 + 9 =$

                  $27 + 5 =$

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10 Calculate according to the example using the column addition method:

	1						
1 9	1 9	1 9	1 9	1 9	1 9	1 9
+ 4	+ 5	+ 6	+ 7	+ 8	+ 9	+ 1 0
2 3						

11 Pop Eye and Jake the Mouse are wondering what happened if a straight line will get cut at some point. Will it be two straight lines, the line will disappear, or something else altogether?
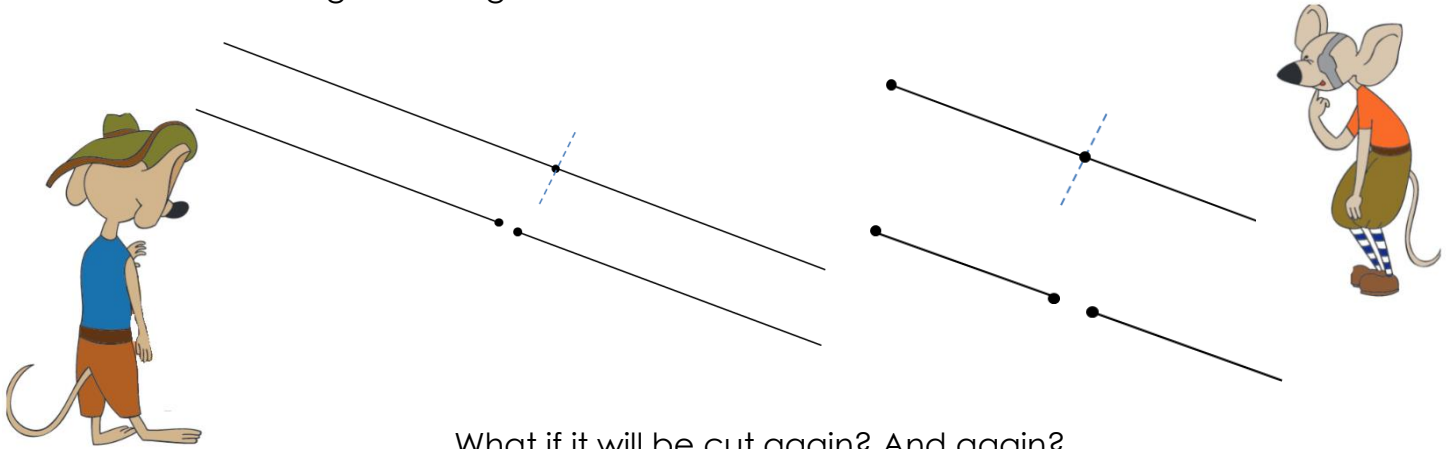
What if it will be cut again? And again?

This is how the brother mice discover a ray and a segment: a part of **a straight line** that has the beginning but not the end is called **a ray**, and a part of a line that has both beginning and end is called **a segment**.

12 How many lines, rays, and segments can you name in the picture below?

A   B

Straight lines _____   Rays _____   Segments _____
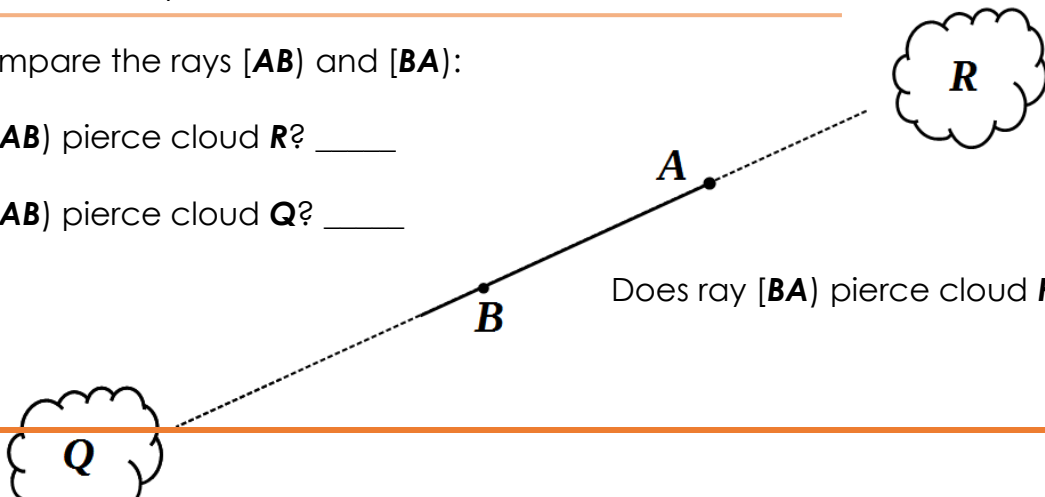
The name of a ray starts with the point of its origin that is followed by the name of any other point on the ray.

13 Compare the rays [**AB**) and [**BA**):

Does ray [**AB**) pierce cloud **R**? _____

Does ray [**AB**) pierce cloud **Q**? _____

Does ray [**BA**) pierce cloud **R**? _____

R

A

B

Q

Does ray [**BA**) pierce cloud **Q**? _____

Can a whole ray be plotted? _____