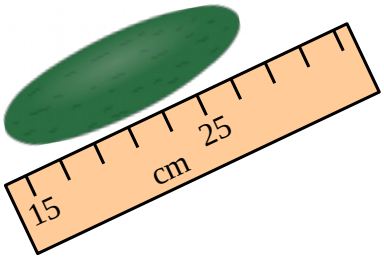
Lesson № 6

277	516	55	246	423

1 Who is this Red Book predator?

200 − 145	300 − 54	603 − 87	902 − 625	601 − 178
G	E	I	T	R

2 How long is the cucumber?



_____

3 Compare without calculating:

$57 + 29 \square 57 + 30$	$72 - w \square 69 - w$	$98 + 37 \square 98 + 35$
$a + 29 \square a + 30$	$72 + w \square 69 + w$	$98 + x \square 98 + (x + 1)$
$a - 29 \square a - 30$	$72 - 18 \square 69 - 18$	$98 - x \square 98 - (x + 1)$

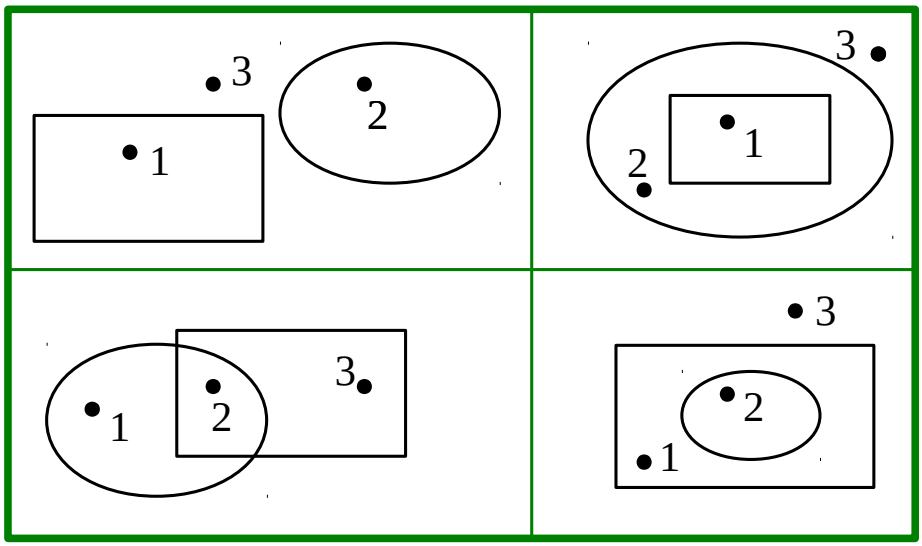
4 Pick the right diagram for the sets of **swans** ☐ and **white birds** ◯.

Give examples for the elements 1, 2, and 3 in the proper diagram.

1. _____

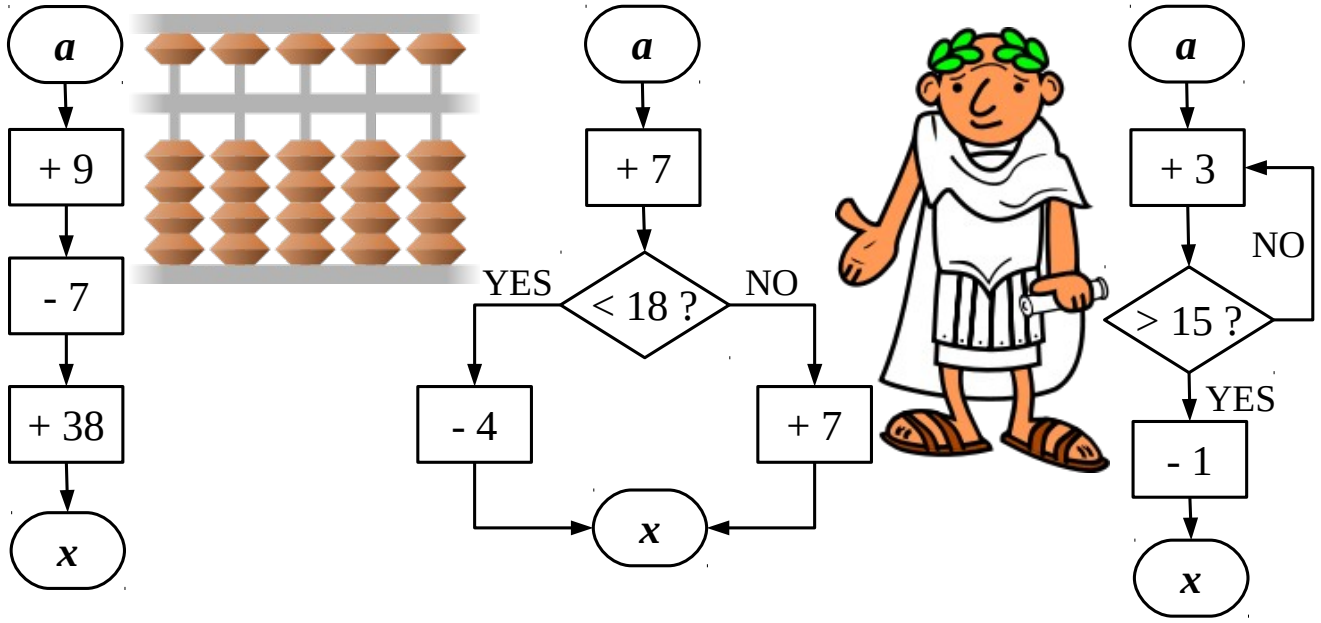
2. _____

3. _____



Linear, Branching, and Cyclic Algorithms.

5 Perform the algorithms on the drawing below. Which of these algorithms and why could be called ***linear, or branching, or cyclic***?



a	4	13	21
x			

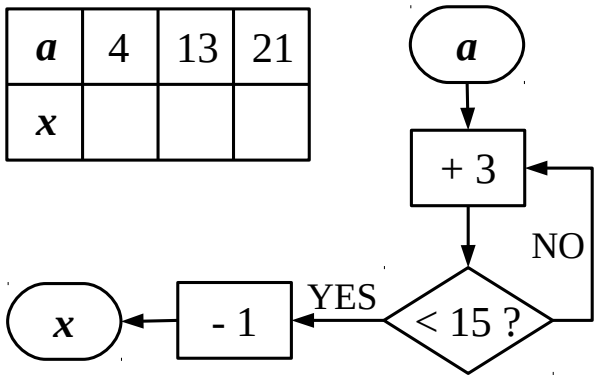
a	4	13	21
x			

a	4	13	21
x			

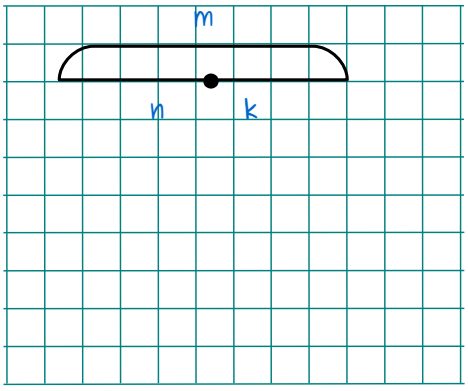
6 Look at the cyclic algorithm. Will this program always produce ***x*** from any ***a***?

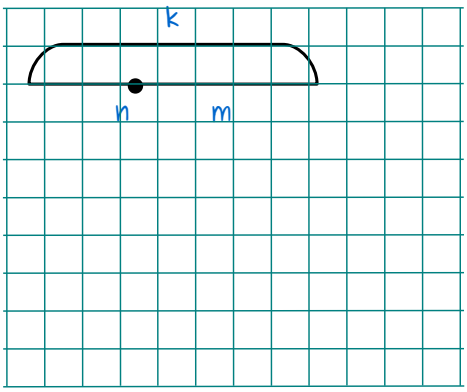
If a cycle stop condition can never be satisfied for a certain input, the program goes into an infinite loop.

a	4	13	21
x			



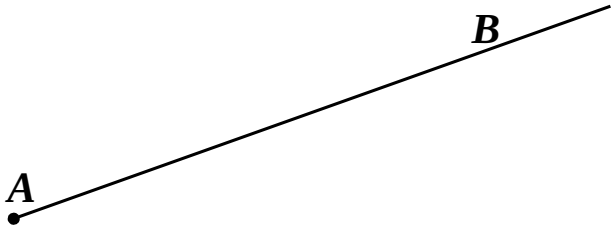
7 Write all 4 possible equalities for the numbers ***m***, ***n***, and ***k*** according to the diagram.



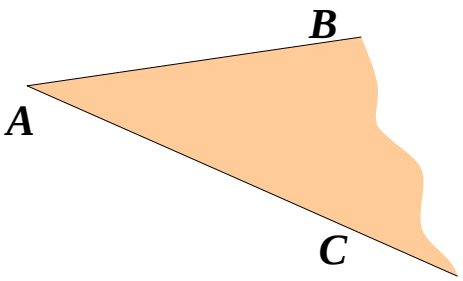


Angles.

8 Plot another ray originating from point ***A***. Name it ray [***AC***). Find the smallest part of the plane limited by the two rays, shade it with a pencil.



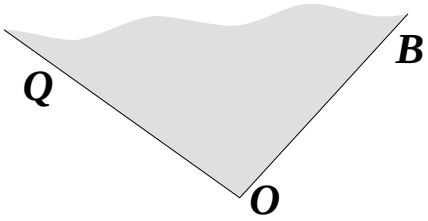
Two rays with a common origin split a plane into two parts. The smaller part is called angle.

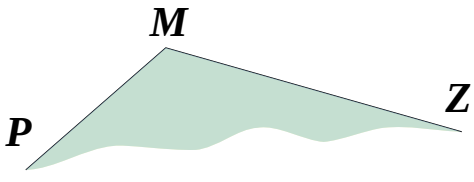


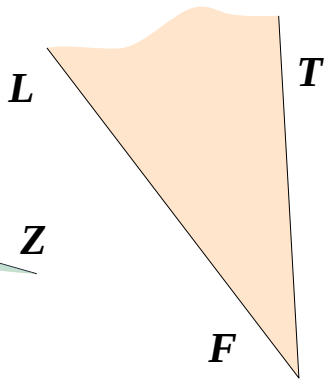
Point ***A*** – vertex of the angle
Rays ***AB*** and ***AC*** – sides of the angle

The angle is denoted in one of the two ways:
∠BAC or ***∠A.***

9 Name the angles and the drawing in two different ways:

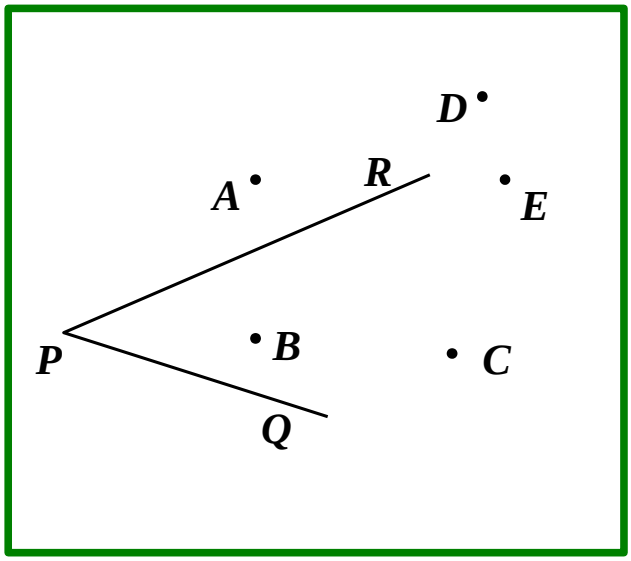






_____ _____ _____

_____ _____ _____



10 Which of the points ***A***, ***B***, ***C***, ***D***, and ***E*** are located inside the angle ∠***RPQ***?

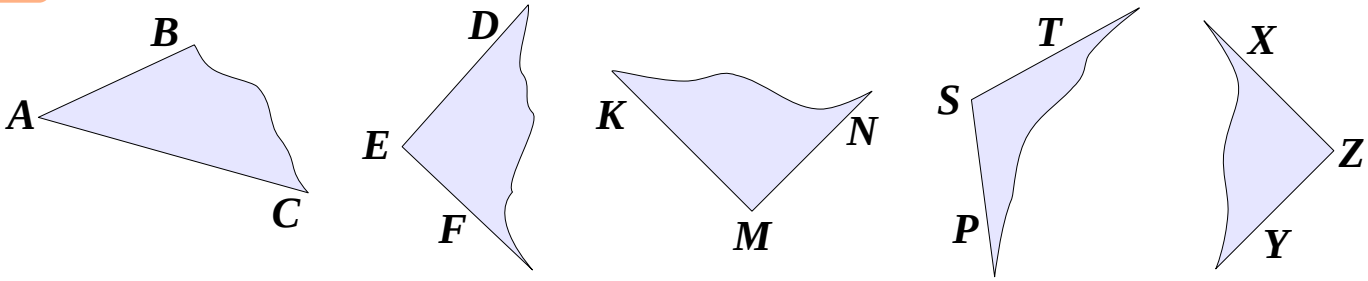
_____

Which of the points ***A***, ***B***, ***C***, ***D***, and ***E*** are located outside the angle ∠***RPQ***?

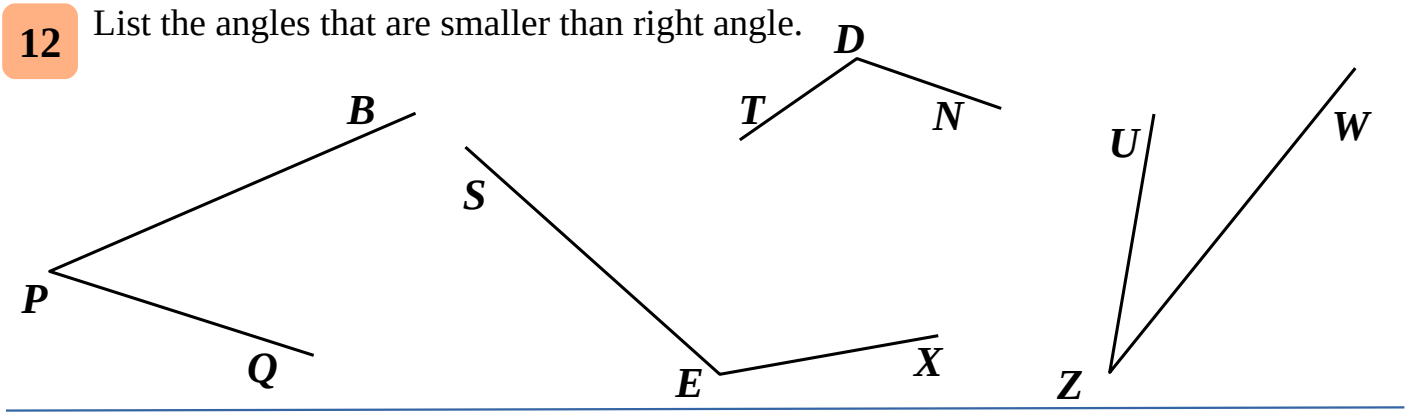
_____

Does line segment [***CD***] intersect ray [***PR***)?

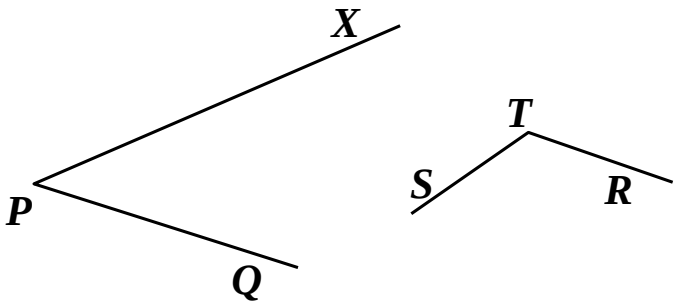
11 Use a right angle template to identify the angles that are bigger than right angle.



12 List the angles that are smaller than right angle.



13 Pop Eye decided to draw an angle for himself. He plotted angle ∠***STR***. Jake the mouse decided to plot a bigger angle for himself and plotted angle ∠***QPX***.



Did he plot himself a bigger angle?

Is angle ∠***STR*** located inside angle ∠***QPX***?

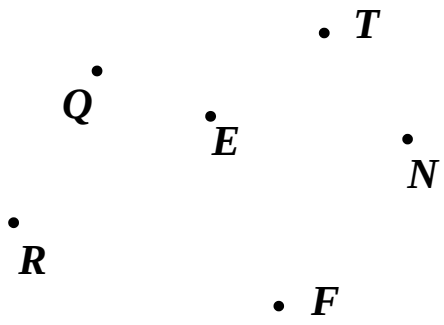
14 Find the intersection of straight lines ***RT***, and ***FQ***.

Label it ***G***.

Plot straight line ***GN***.

Find the intersection of straight lines Q***T***, and ***RF***.

Label it ***P***.



15 Find the answer without cumbersome calculations:

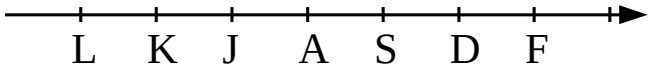
***a*).** 564 + 821 – 319 + 319 – 821 = _____

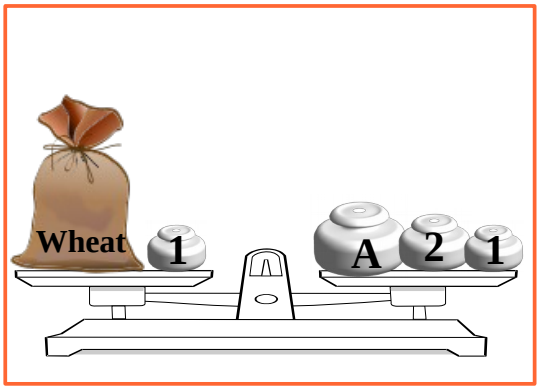
***b*).** 930 – 509 + 821 – 4 + 509 – 821 + 4 + 7 – 930 = _____

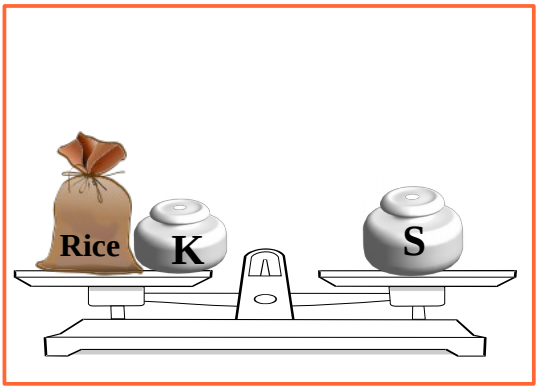
***c*).** 654 – 97 + 218 + 329 – 218 + 97 – 329 – 654 = _____

d*).** 309 + 629 – 211 + ***x + 211 – 629 – 309 + 7 – ***x*** = _____

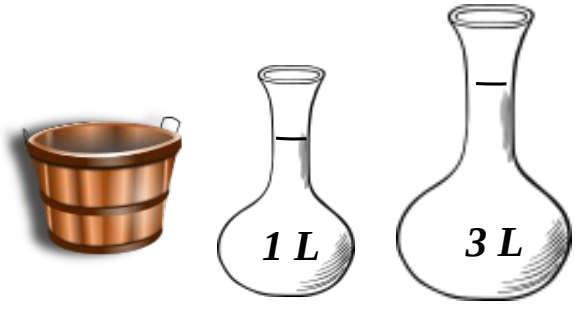
16 Use the "wild" number line to weigh the grain:





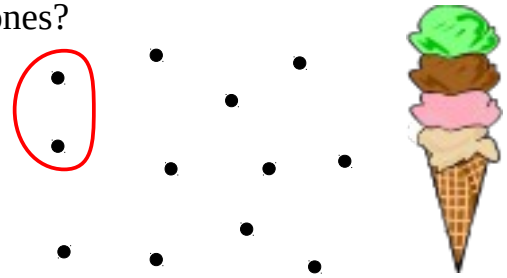


17 You have a 1 liter measure and a 3 liter measure that you can fill to the mark. How can you measure 2 liters exactly into a bucket with no marks?



Grouping and Division:

18 Foxy Tail is treating kangaroos with ice-cream. He gives each kangaroo 2 cones. How many kangaroos can he treat with 12 cones?



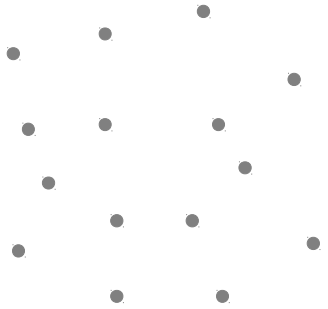
Divide the 12 “cones” on the drawing into groups of 2:

How many groups of 2 did you find? ___

When we grouped the points **into** groups of 2 we **divided** them

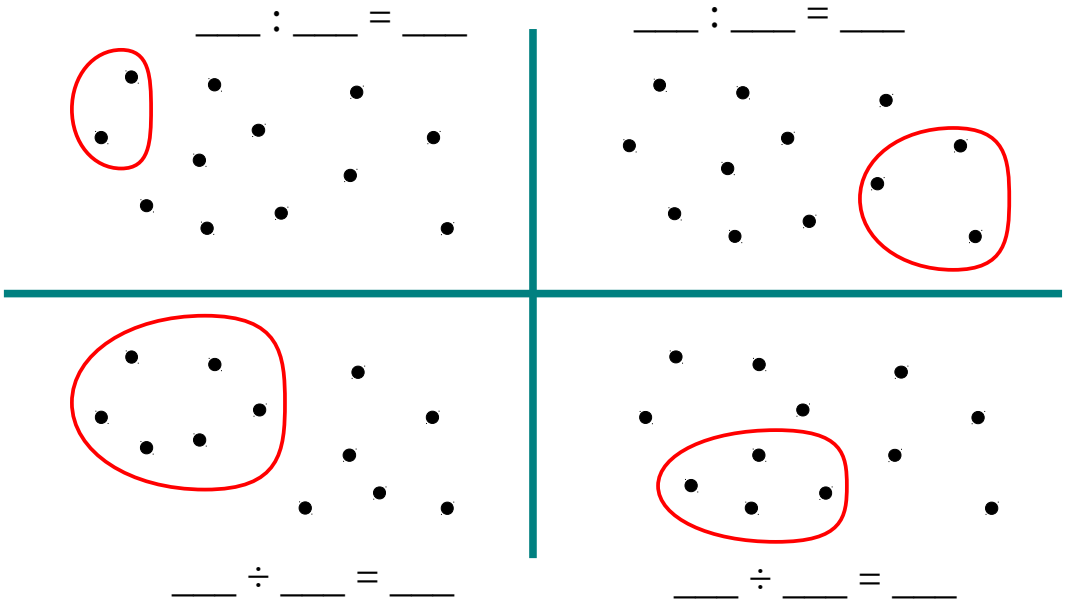
To express division we write **12 ÷ 2** = ____ or **12 : 2** = ____

19 Little Joe wants to visit several of his friends and bring each friend a candy. The candy costs 3 mouse coins. He has 15 coins. Divide the 15 points into groups of 3 to see how many friends can Little Joe visit while bringing a candy to each of them.

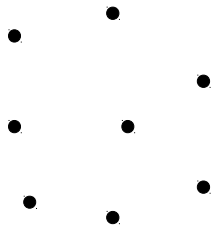


15 : 3 = ____

20 Divide the 12 points on each drawing according to the instructions and write down the results of the division:

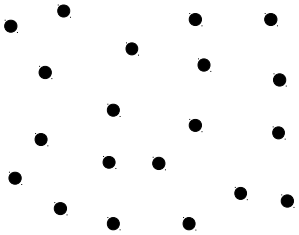


21 Use *the drawings to help yourself to solve a problem:*



A. Jake the Mouse wants to buy books with his 8 coins. Each book costs 2 coins. How many books can he buy?

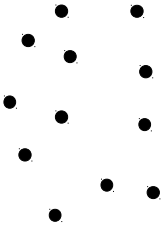
__8 : 2 = _____



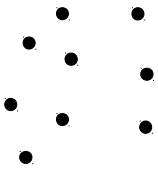
B. A zoo-keeper need to feed his elephant 4 cabbages a day. He has 20 cabbages in a warehouse. How many days can he do without shopping for more cabbage?

_____

C. How many taxis are needed to take 12 people into airport if each taxi may take 4 passengers?



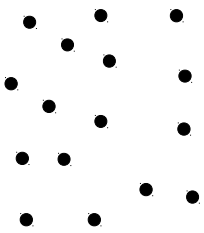
_____



D. A roller coaster ride at a fair costs 3 tickets. Pop Eye has 9 tickets. How many times can he ride his favorite roller coaster?

_____

E. Every winter day a forest keeper uses 2 stacks of firewood to keep himself warm. He has just bought 16 stacks of firewood at a market. How many days can he stay warm before he needs to get more firewood?



_____

22 For each expression mark the order of operations and write a program to evaluate it. For each step write the remaining expression by replacing the operation with its result.

$(w - 1) + (x + 4)$

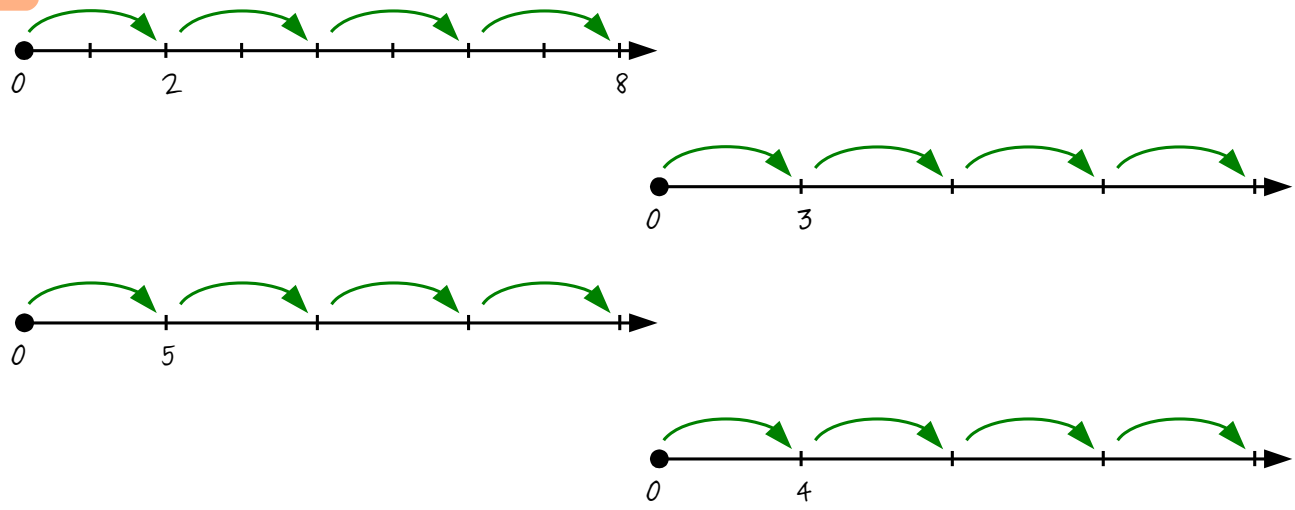
1. _____ _____
2. _____ _____
3. _____ _____

$y - (3 + x) + p$

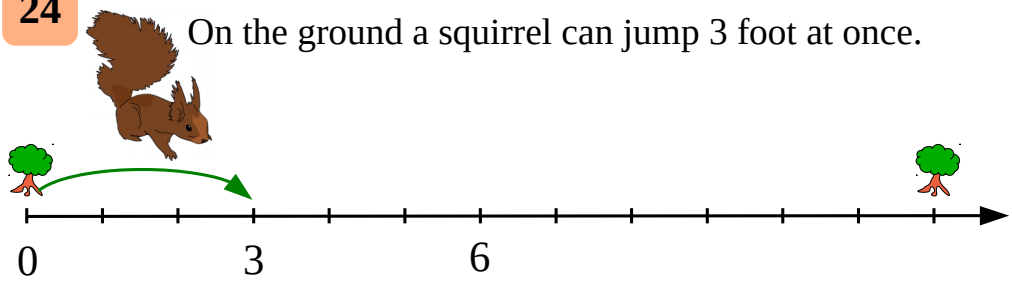
1. _____ _____
2. _____ _____
3. _____ _____

Skip-Counting.

23



24



On the ground a squirrel can jump 3 foot at once.

How far can it move in 3 jumps? _____

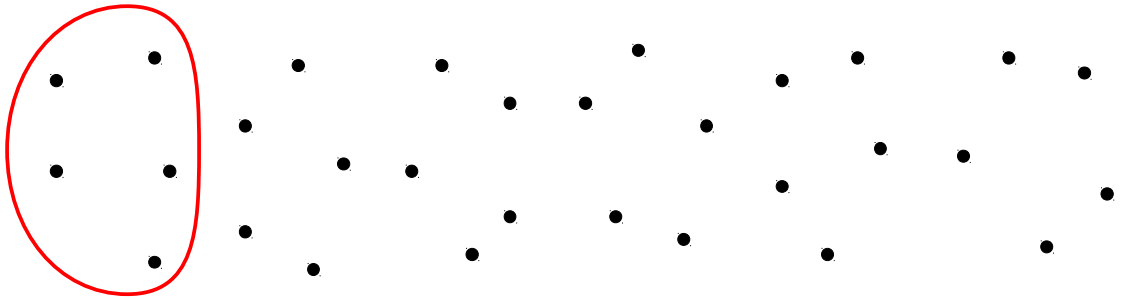
How far is one tree from another? ____

How many jumps does the squirrel need to get from one tree to another? ____

Skip-counting and Multiplication:

25 Divide the points on the plot into groups of five.

Count the groups on the drawing. ___ Count the points on the drawing. ____



When we grope points by 5 we **divide** them.
When we count grouped points we **skip-count** them.
Skip-counting is also called **multiplication**.

We write 5 × ___ = ___ **or** 5 · ___ = ___

Does grouping make it easier to count points? _____

26 Try to divide these points into groups of 5 before counting them.

How many groups of 5 did you count? ____

Count points using skip-counting

_____

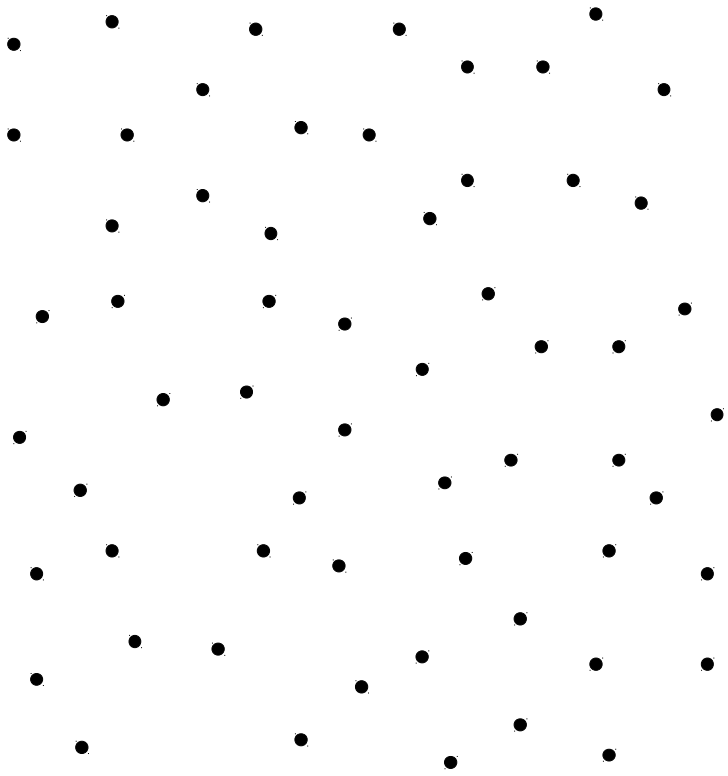
Did grouping make counting easier?

Express the results of skip-counting via multiplication.

5 × ___ = ___

Express results of dividing points into groups of five:

___ : 5 = ___



Expressing Addition of Like Numbers via Multiplication.

27 Rewrite additions using multiplication:

$4 + 4 + 4 + 4 + 4 + 4 =$ ____×____

$\underbrace{4 + 4 + \ldots + 4}_{16 \text{ times}} =$ ____×____

$a + a + a + a + a + a =$ ____×____

$\underbrace{a + a + \ldots + a}_{12 \text{ times}} =$ ____×____

$\underbrace{4 + 4 + 4 \ldots + 4 + 4}_{b \text{ times}} =$ ____×____

$\underbrace{a + a + \ldots + a}_{z \text{ times}} =$ ____×____

28 Calculate:

$3 + 3 + 3 + 3 + 3 =$ ___ therefore $3 \times 5 =$ ___

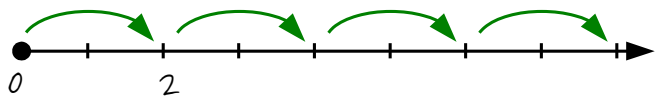
$7 + 7 + 7 + 7 =$ ___ therefore $7 \times$ ___ = ___

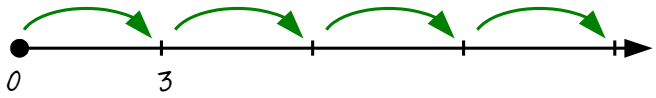
$4 + 4 + 4 + 4 + 4 =$ ___ therefore $4 \times$ ___ = ___

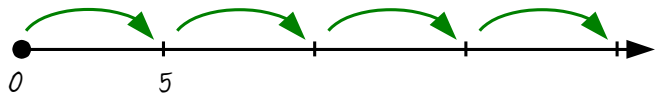
$8 + 8 + 8 =$ ___ therefore $8 \times$ ___ = ___

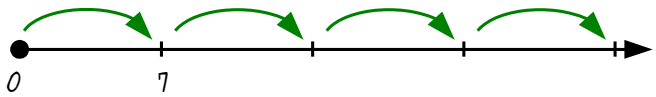
Multiplication/ Division Table.

29 Compare the skip-counting steps with the entries in the multiplication-division table on the back of your notebook.







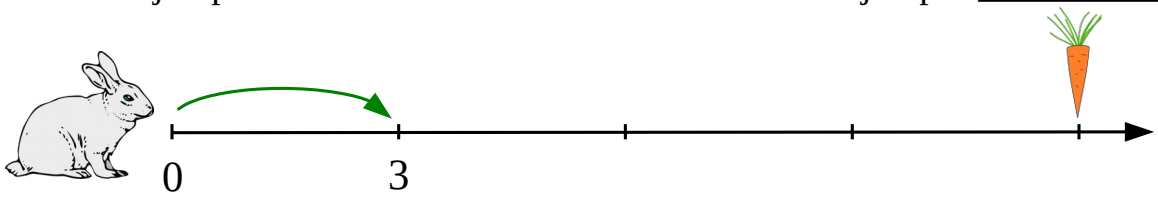


30 Use multiplication-division table to find results for multiplication and division:

6 × 7 = ___	7 × 6 = ___	42 : 6 = ___	42 : 7 = ___
3 · 7 = ___	7 · 3 = ___	21 ÷ 7 = ___	21 : 3 = ___
4 × 5 = ___	5 × 4 = ___	20 : 5 = ___	20 : 4 = ___
8 · 9 = ___	9 · 8 = ___	72 ÷ 8 = ___	72 : 9 = ___

31 Solve the word problems:

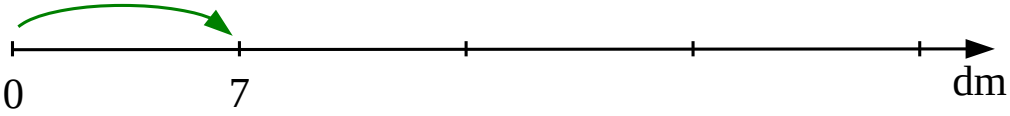
A. A rabbit jumps 4 feet at once. How far will it move in 3 jumps? _____



B. How many jumps does he need to get to the carrot? _____

C. Little Joe can jump 7 dm in one jump. How far can he move in 6 jumps?

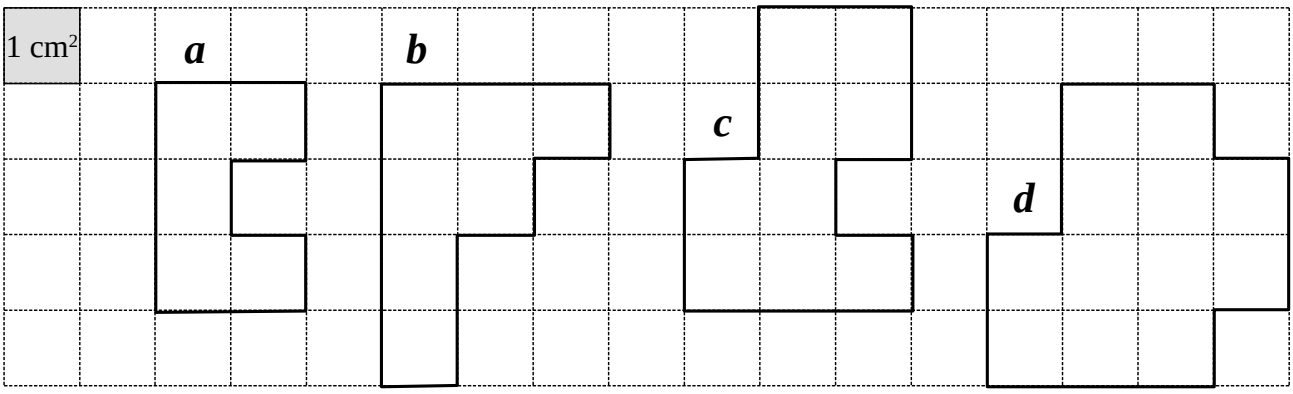
_____



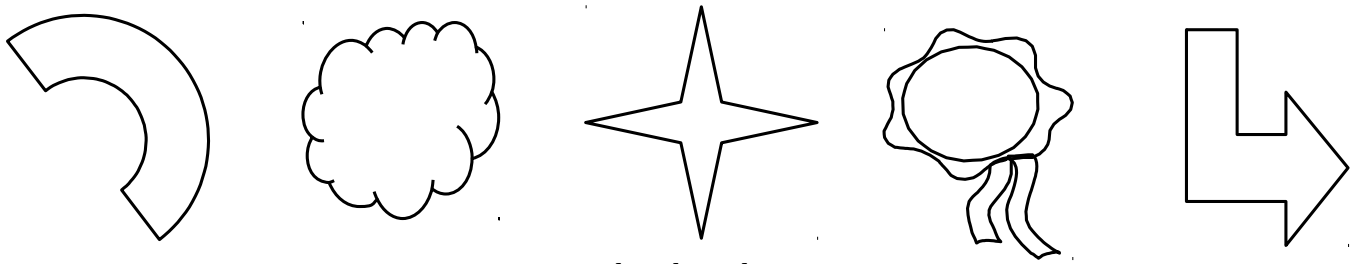
D. How many jumps does Little Joe need to move 35 dm? _____

Areas of Shapes:

32 How many times does the 1 cm^2 square fit into each of the shapes below:

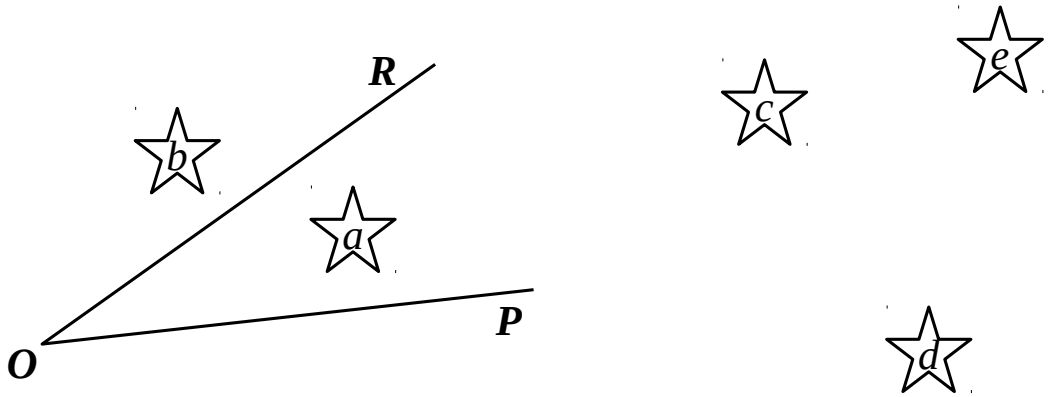


33 Cross out the shapes that have no lines of symmetry. Find the lines of symmetry in the remaining ones:

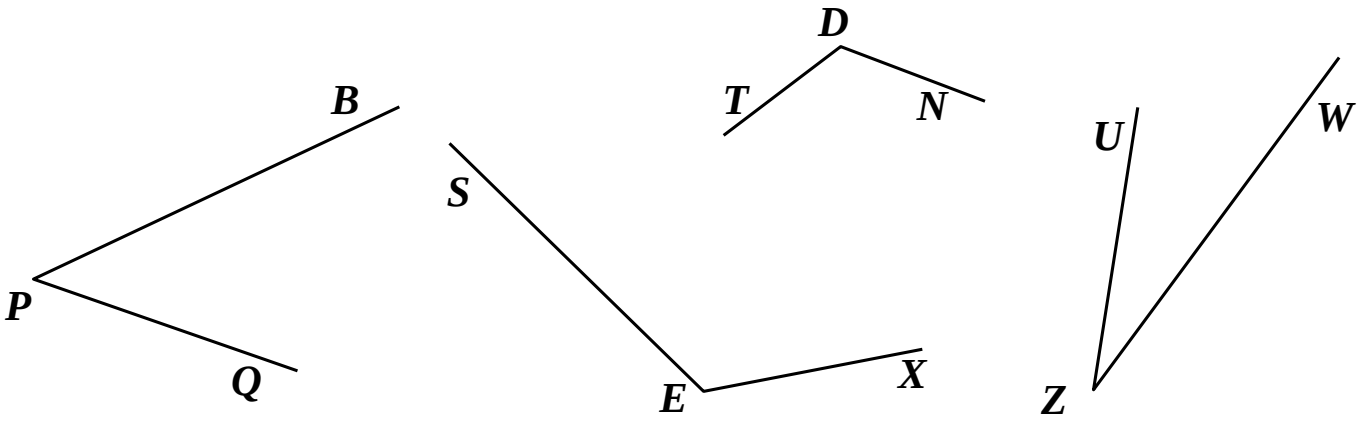


This shape has 4 lines of symmetry

34 Which stars are inside the angle $\angle ROP$. _____



35 Circle the angles that are bigger than right angle:



List these angles by names: _____