school nova™   **Math 2   Homework 18**

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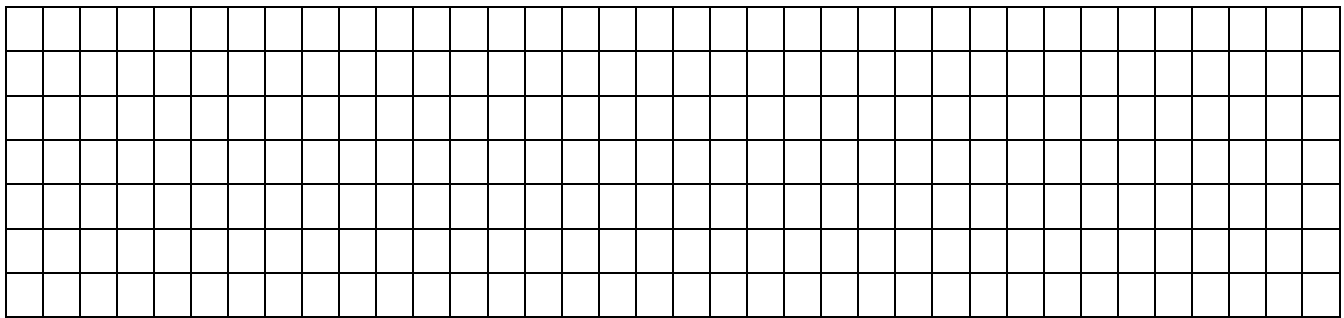**1** Number the order of operations and find the values of each expression (use the graph paper below to calculate!)

$215 - (38 + 169) =$ _____

$500 - (239 + 85) + 457 =$ _____

$(357 + 194) - 263 =$ _____

2 Write the expressions:

a) Pete has \$$a$, Mike has \$$b$. How much money will they have left after they buy ice cream that costs \$$c$? _____

b) Kate has \$$m$. She buys a pen for \$$a$ and a notebook for \$$b$. How much money does she have left?
_____

c) How much money did Victor have at the beginning, if after spending \$$b$ he had \$$d$ left?
_____

3 Calculate:

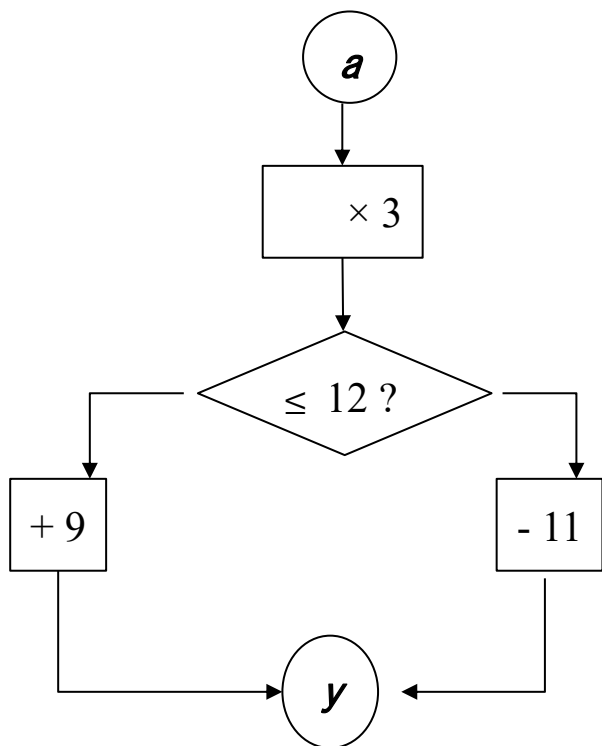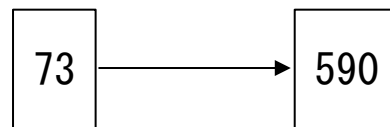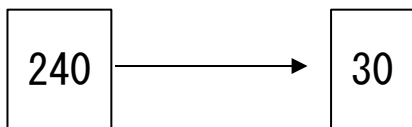|		
$548 - 0 =$	$0 + 401 =$	$0 \times 1 =$
$854 - 853 =$	$0 + 0 =$	$0 \times 0 =$
$111 \times 0 =$	$200 \times 0 + 1 =$	$10 \times 39 =$
$200 \times 10 - 0 =$	$15 \times 30 + 0 =$	$200 \times 2 - 1 \times 10 =$

Report the time you spent: _____ minutes

_____

4 Fill in the table, writing for each given value of *a* the corresponding value of *y*, calculated using the algorithm below:

a

$\times 3$

$\leq 12\ ?$

$+9$ -11

y

a	1	2	3	4	5	6	7	8	9
y									

5 Construct and solve equation for each diagram below:

240 → 30   73 → 590

_____
_____
_____
_____

_____
_____
_____
_____

6 a) Kyle's dog usually eats twice a day. Once the dog lost its appetite and did not eat for 3 days in a row. How many treats did the dog eat that week? _____

b) A caterpillar climbs a tree. Each day it crawls 2 meters up and each night it crawls 1 m down. How many days will it take to crawl to the top if the tree is 15m high?

_____

7

Look at the table showing how to add numbers from 1 to 3. Cut out the table and fold it over the dotted line. Notice that the blue squares match up and so do the orange squares. Notice that the squares that match up have the same numbers in them. We say that the squares that match up when you fold along the line are **"mirror images"** of each other.

Explain why the numbers in the orange squares are equal.

+	1	2	3
1	2	3	4
2	3	4	5
3	4	5	6

8

The table below shows how to add numbers from 1 to 9.
Two squares are shaded blue and two are green.

Q: Are the blue squares mirror images (diagonal colored yellow is a "mirror") of each other? Explain why?

Q: Are the green squares mirror images of each other? Explain why the numbers in the green squares are equal.

Find at least 5 more mirror image squares and shade those pairs with the same color. Why are the mirror image numbers always equal? What is the property of addition did you use?

_____

+	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	10
2	3	4	5	6	7	8	9	10	11
3	4	5	6	7	8	9	10	11	12
4	5	6	7	8	9	10	11	12	13
5	6	7	8	9	10	11	12	13	14
6	7	8	9	10	11	12	13	14	15
7	8	9	10	11	12	13	14	15	16
8	9	10	11	12	13	14	15	16	17
9	10	11	12	13	14	15	16	17	18

9

Daniel has a few boxes with pencils. In each box there are either 3 or 5 pencils.
All boxes are closed, and he cannot open them. Answer each question by writing the expression how he can do it.
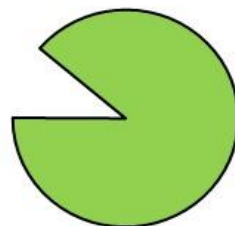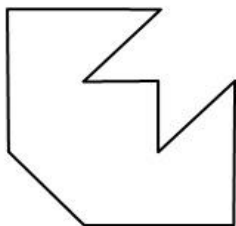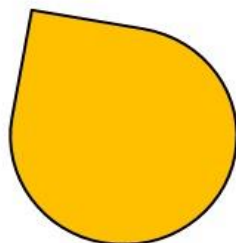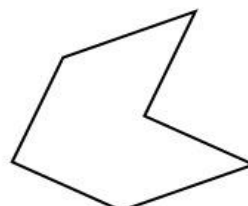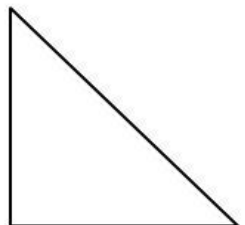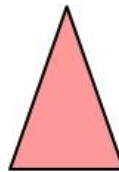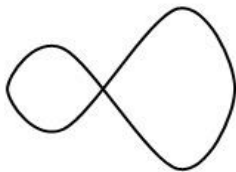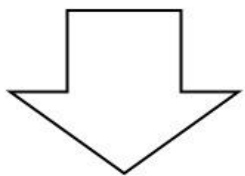a) Can he take exactly 29 pencils without opening any boxes?

_____

b) Can he take 14 pencils without opening any boxes?

_____

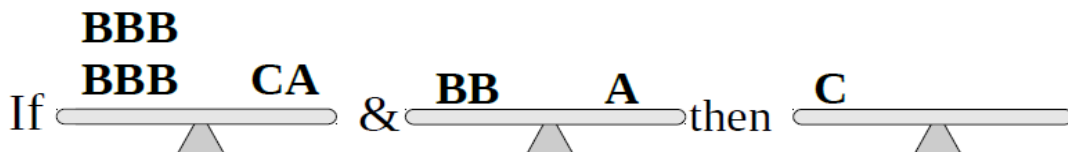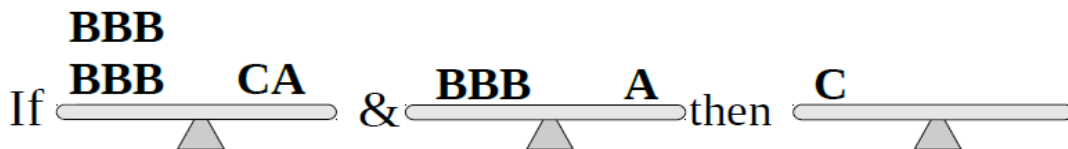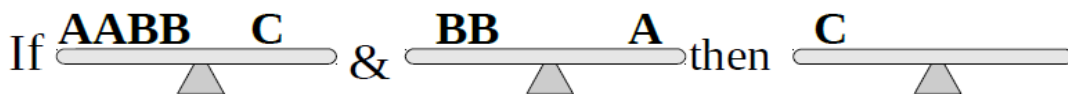c) Can he take 31 pencils without opening any boxes?

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10 Each shape below has a line of symmetry. Draw a line of symmetry for each shape. Is there any shape with more than one line of symmetry? Circle the shape.
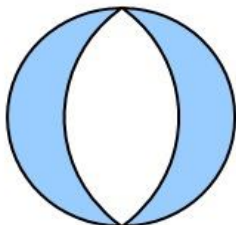
11 Write only A's to balance each scale:

If $\dfrac{\text{AB} \quad\quad \text{C}}{\triangle}$ & $\dfrac{\text{B} \quad\quad \text{AA}}{\triangle}$ then $\dfrac{\text{C}}{\triangle}$

If $\dfrac{\text{AABB} \quad \text{C}}{\triangle}$ & $\dfrac{\text{BB} \quad\quad \text{A}}{\triangle}$ then $\dfrac{\text{C}}{\triangle}$

If $\dfrac{\begin{array}{l}\text{BBB}\\\text{BBB} \quad \text{CA}\end{array}}{\triangle}$ & $\dfrac{\text{BBB} \quad\quad \text{A}}{\triangle}$ then $\dfrac{\text{C}}{\triangle}$

If $\dfrac{\begin{array}{l}\text{BBB}\\\text{BBB} \quad \text{CA}\end{array}}{\triangle}$ & $\dfrac{\text{BB} \quad\quad \text{A}}{\triangle}$ then $\dfrac{\text{C}}{\triangle}$

12

Practicing Kangaroo:

1. There are 12 books on a shelf and four children in a room. How many books will be left on the shelf if each child takes one book?

(A) 12   (B) 8   (C) 4   (D) 2   (E) 0

2. Kasia has 3 brothers and 3 sisters. How many brothers and how many sisters does her brother Mike have?

(A) 3 brothers and 3 sisters   (B) 3 brothers and 4 sisters   (C) 2 brothers and 3 sisters   (D) 3 brothers and 2 sisters (E) 2 brothers and 4 sisters

3. Ana has one coin of 5 cents, one coin of 10 cents, one coin of 20 cents and one coin of 50 cents. How many different values can she make with these coins?

(A) 4   (B) 7   (C) 10   (D) 15   (E) 20

13

Using any grid paper below, draw the rectangles with an A (area) equal to:

    a) 12 unit squares   b) 20 unit squares
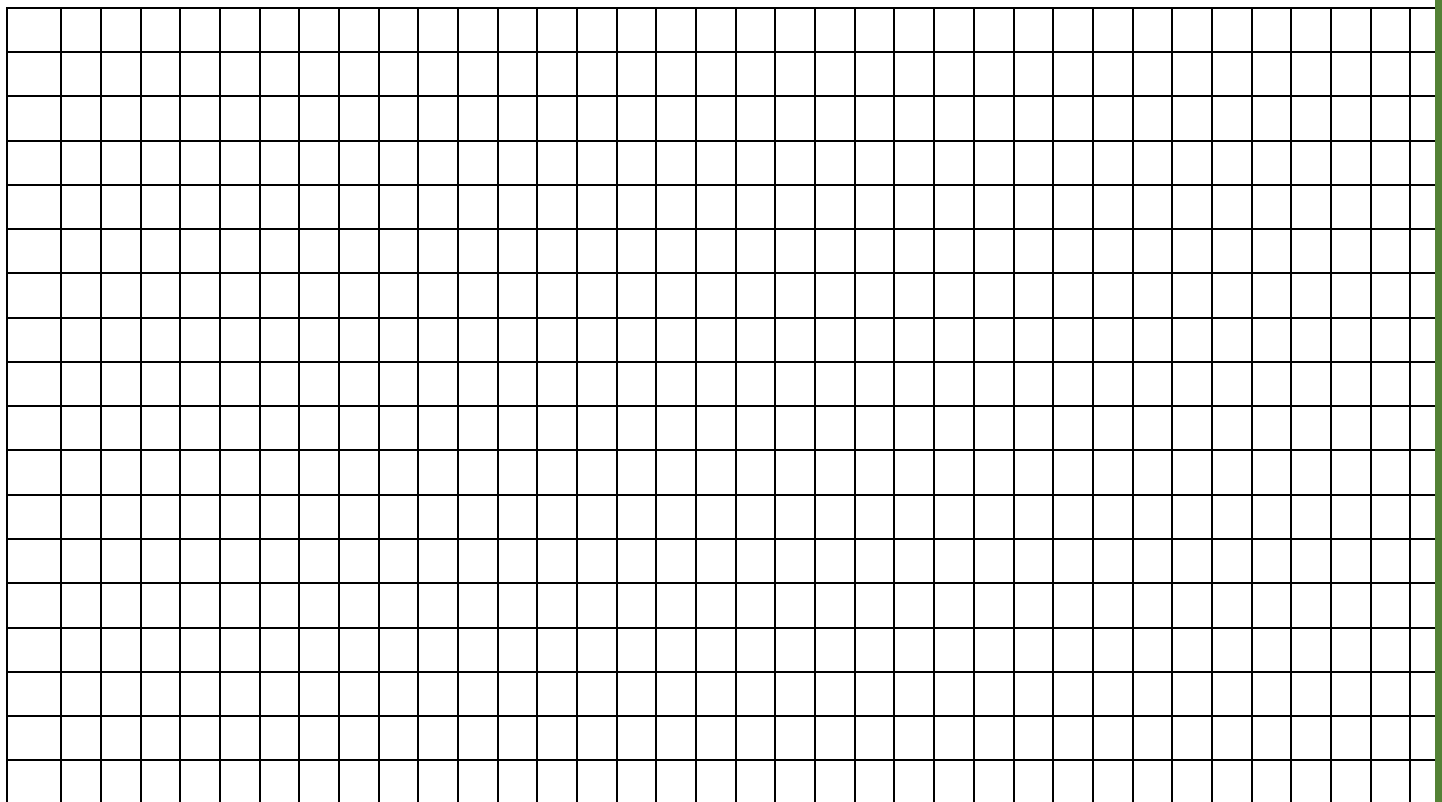
How many rectangles you can draw in each case?

    a) _____   b) _____
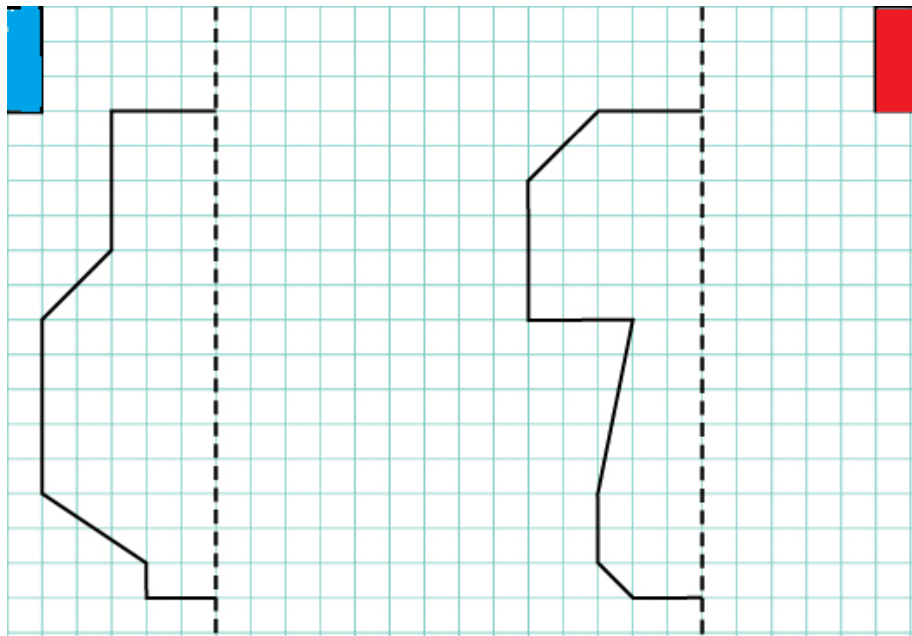
Calculate a perimeter (P) for each rectangle. What did you notice?
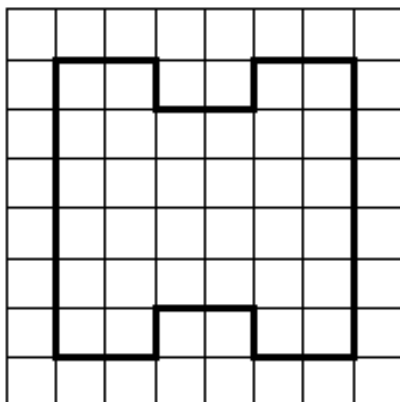
    a) _____   b) _____

        _____   _____

        _____   _____

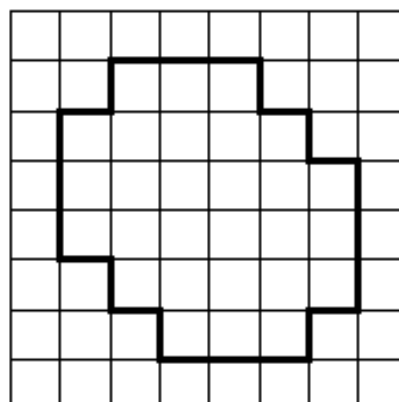**14** Add the mirror image of each shape.

15 Find and draw lines of symmetry of the following figures:

(a)

(b)

16 Insert missing numbers:

$15 + (5 \times \ldots) = 25$ $15 + (5 \times \ldots) = 55$ $15 + (5 \times \ldots) = 40$

$15 + (5 \times \ldots) = 60$ $15 + (5 \times \ldots) = 70$ $15 + (5 \times \ldots) = 75$

17 Matchsticks puzzles. TAKE AWAY 2 matchsticks to make the equation correct.

6