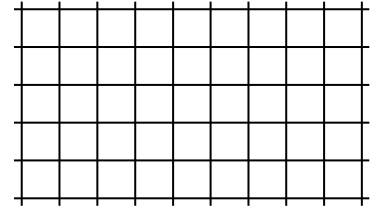


WARM-UP

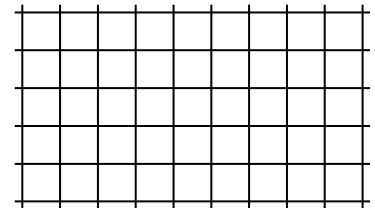
1.

Math puzzles:

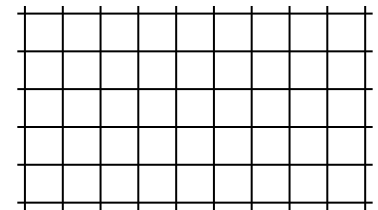
a) Mike thought of a number. When he added 400 to the number he got 900. Which number did Mike think of?



b) Sophie thought of a number and subtracted 600 from it. As a result she got 200. What number did Sophie think of?



c) Boris thought of a number, subtracted it from 700 and got 300. Which number did he think of?



2.

In the following each letter stands for a single digit.

Compare numbers using $>$, $<$, or $=$:

SP M

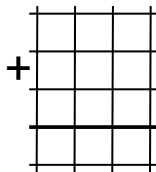
Q0 Q1

3L 5L

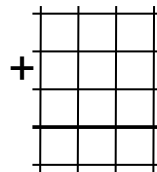
3.

Write the numbers in columns and calculate their sums.

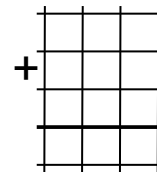
$213 + 48 + 456$



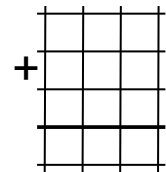
$276 + 509 + 84$



$525 + 370 + 9$



$35 + 460 + 1$



NEW MATERIAL

Commutative and Associative properties of addition

Commutative property: When two numbers are added, the sum is the same regardless of the order of the addends. For example: $3 + 5 = 5 + 3$

Associative property: When three or more numbers are added, the sum is the same regardless of grouping of the addends. For example: $(3 + 5) + 1 = 3 + (5 + 1)$

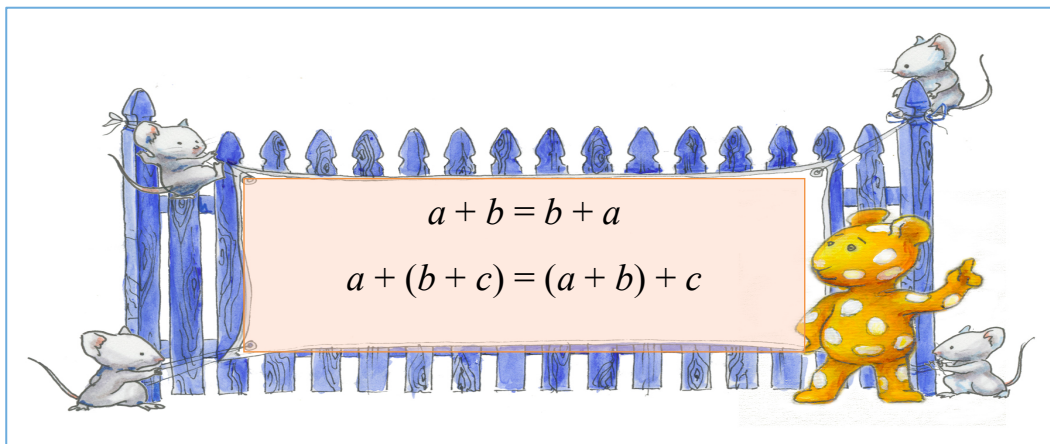
- 4.** Match the expressions whose values are equal and calculate their values using the most convenient way. Which properties of addition did you use?

$$18 + 64 + 12 + 6 = (18 + 12) + (64 + 6) = 30 + 70 = 100$$

$$22 + 13 + 78 + 17 = \underline{\hspace{10cm}}$$

$$137 + 40 + 113 + 60 = \underline{\hspace{10cm}}$$

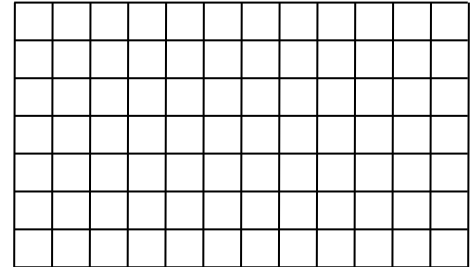
$$236 + 83 + 17 + 44 + 20 = \underline{\hspace{10cm}}$$



5.

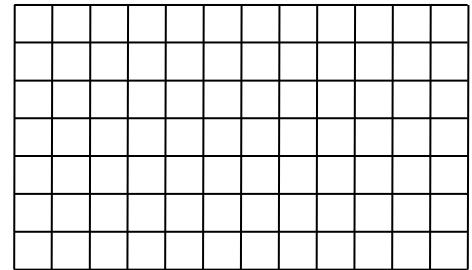
a) Perform the actions in the following order:

- Subtract number 3 from the number 8
- To the result, add the number 4



b) Perform the actions in this order:

- Increase number 3 by 4
- Subtract the result from the number 8



What did you notice?

6.

Find the values of the expressions for $a = 30$; $b = 12$; $c = 3$. What did you notice?

$(a - b) + c =$ _____

$a - (b + c) =$ _____

7.

Number the order of operations in the way that they should be performed.

a) $26 + (32 - 16)$

b) $(247 - 123) + (384 - 164)$

c) $93 + (12 + 16) - 35$

d) $(72 + 13) - 47 - (94 - 76)$

e) $a + b - c + d$

f) $(a + b) - (c + d)$

g) $a + (b - c) + d$

h) $a + (b - c + d)$

8.

Place parentheses where necessary to make sure the order of operations is as shown:

$$\begin{matrix} \textcircled{1} & \textcircled{2} \\ a + b + c \end{matrix}$$

$$\begin{matrix} \textcircled{1} & \textcircled{2} \\ a - b + c \end{matrix}$$

$$\begin{matrix} \textcircled{1} & \textcircled{2} \\ a + b - c \end{matrix}$$

$$\begin{matrix} \textcircled{1} & \textcircled{2} \\ a - b - c \end{matrix}$$

$$\begin{matrix} \textcircled{2} & \textcircled{1} \\ a + b + c \end{matrix}$$

$$\begin{matrix} \textcircled{2} & \textcircled{1} \\ a - b + c \end{matrix}$$

$$\begin{matrix} \textcircled{2} & \textcircled{1} \\ a + b - c \end{matrix}$$

$$\begin{matrix} \textcircled{2} & \textcircled{1} \\ a - b - c \end{matrix}$$

REVIEW

9.

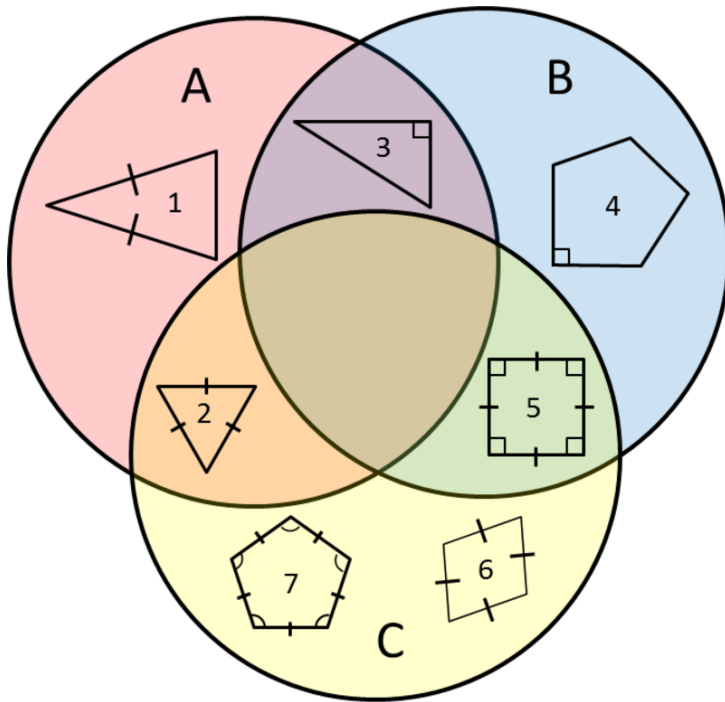
Use a Venn diagram to solve the problems:

- a) Out of 30 students who play sports 12 play soccer and 23 play basketball. How many students play both sports?

- b) Out of 30 students 14 students study French, 16 students study Spanish and 5 students don't take either language. Are there any students study both French AND Spanish? How many?

10.

a) What are the characteristics shared by shapes within circle A? Within circle B? Within circle C? Double check to make sure that any shapes having that characteristics are contained within a circle and shapes that don't are outside of the circle.



Characteristics of all shapes contained in Circle A: _____


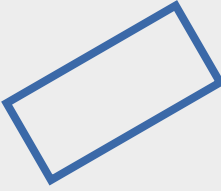


Characteristics of all shapes contained in Circle B: _____

Characteristics of all shapes contained in Circle C: _____

b) Where would you place a rectangle that does not have four sides of the same length? Why?

11.

Look at each figure. Place an X in the box if it appears to describe the figure pictured.

				
4 vertices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Four sides	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opposite sides parallel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Perpendicular sides	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opposite sides have equal length	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All sides have equal length	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Challenge yourself

14.

There are apples on three plates: 1 on the first plate, 3 on the second and 8 on the third. Try to move apples to make the number of apples on each plate the same obeying the following rules:

- In one move, you can take any number of apples from one plate and move them to the other plate.
- The number of apples you can add to any plate should be equal to the number of apples that are already there. In other words, you can only double the number of apples that are already on the receiving plate.
- The total number of moves is unlimited.

