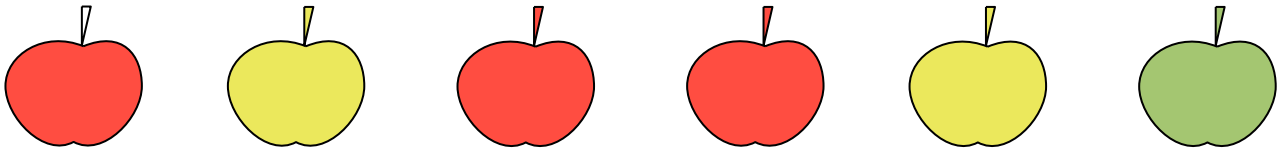
Lesson 10. Classwork

WARM-UP

1. A statement can be either true or false. Look at the apples and mark all tatements TRUE or FALSE .



_____ All of the apples are yellow.

_____ All of the apples are red.

_____ There is only one green apple.

_____ There are orange apples.

2. Express in meters, decimeters, and centimeters.

485 cm =_____ 562 cm = _____

807 cm =_____ 350 cm =_____

3. Compare if possible using >, <, or =. Cross out any that you cannot compare.

23 kg ☐ *5 kg* *68 cm* ☐ *86 cm* *3 dm* ☐ *16 cm*

18 l ☐ *37 l* *51 dm* ☐ *57 dm* *7 m* ☐ *8 kg*

4. What number does each letter stand for? Each letter a one digit number.

F + F = 10 8 – P = P T + T = T

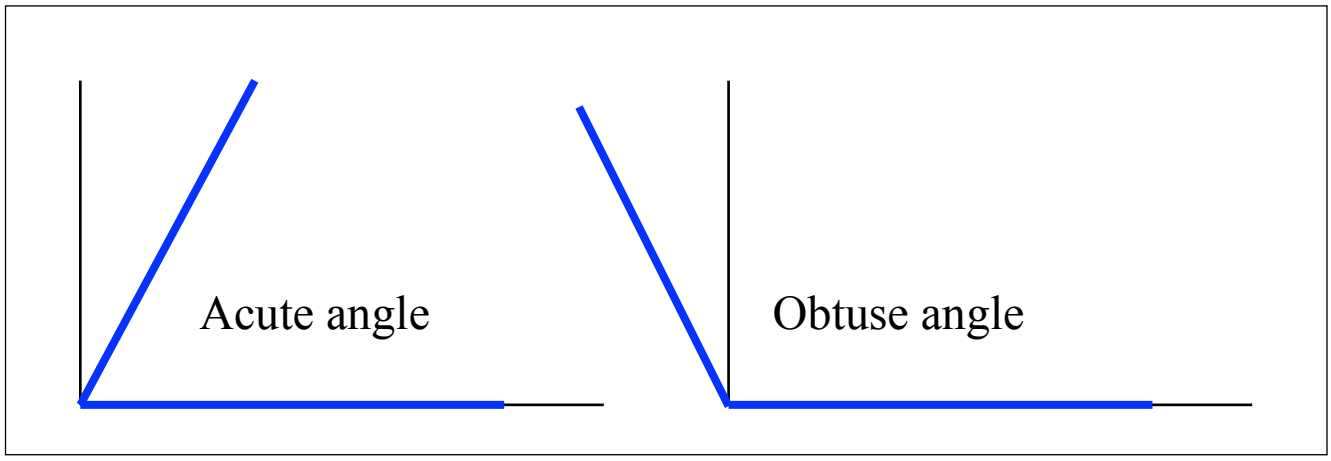
F = P = T=

NEW MATERIAL

Types of angles:

An **acute angle** is an angle that is smaller than a right angle.

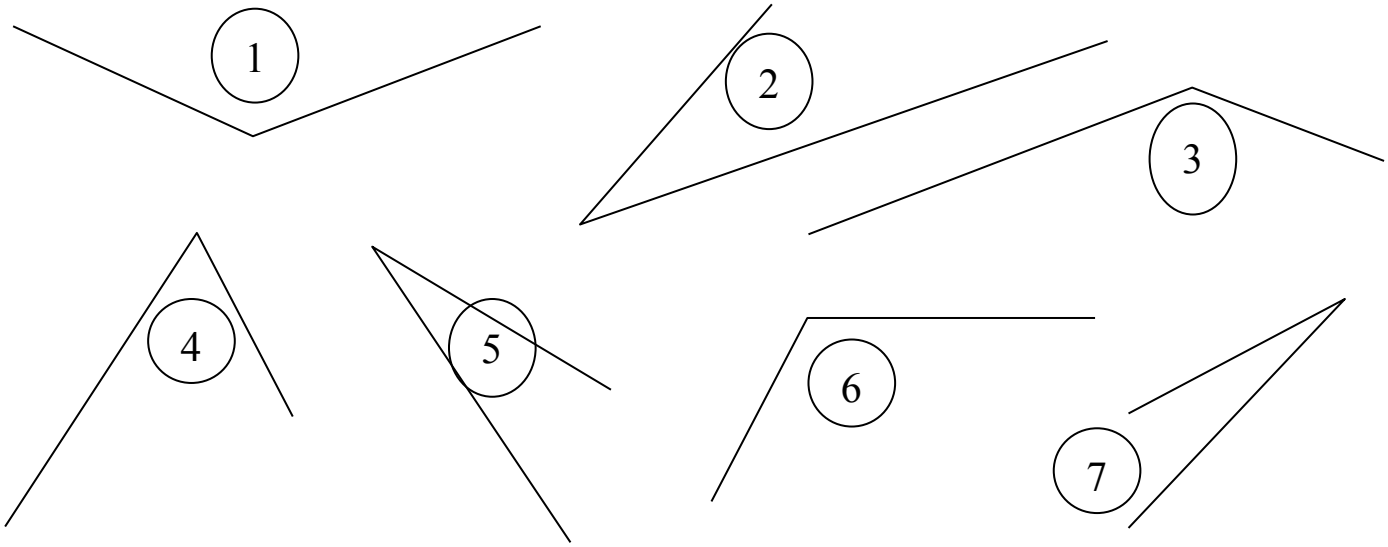
An **obtuse angle** is an angle that is larger than a right angle.



8. Use a right angle template to find all acute angles and all obtuse angles. List them:

a) The acute angles _____

b) The obtuse angles _____



9.

Find words, which do not belong to the group. Circle them and explain your decision.

a) wall, window, white, blue, wheel.

b) hill, mountain, river, forest, bus.

c) bicycle, taxi, bus, cow, truck.

d) book, notebook, melon, eraser, ruler.

10. On the drawing below you can see twelve shapes – squares and circles. Some of them are of different size – big, medium and small; some of them are colored and some are not. Shape **A** is a small circle. Find all shapes which have **only one** common property with shape **A**.

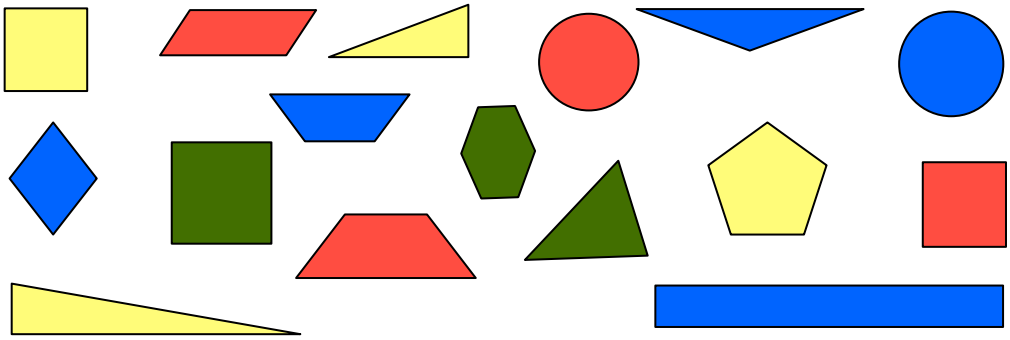
A **set** is a collection of things, or objects. Here are some examples:

- Set of all digits: 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9
- Set of all students in the class
- Set of all toys of red color

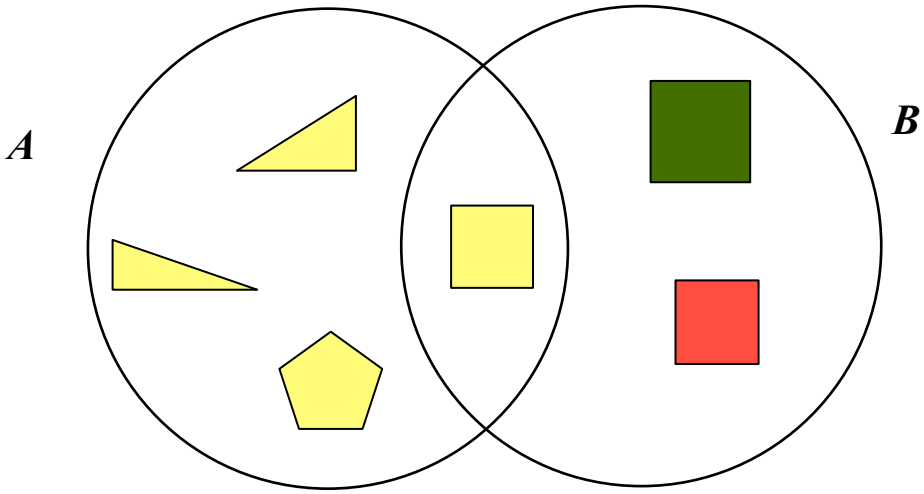
We illustrate sets by drawing **Venn diagrams**: we draw all objects as points on the plane, and then we draw a circle (or some other shape) around all objects of a set. Different circles correspond to different sets.

11. Let us sort those shapes out into different groups (sets).

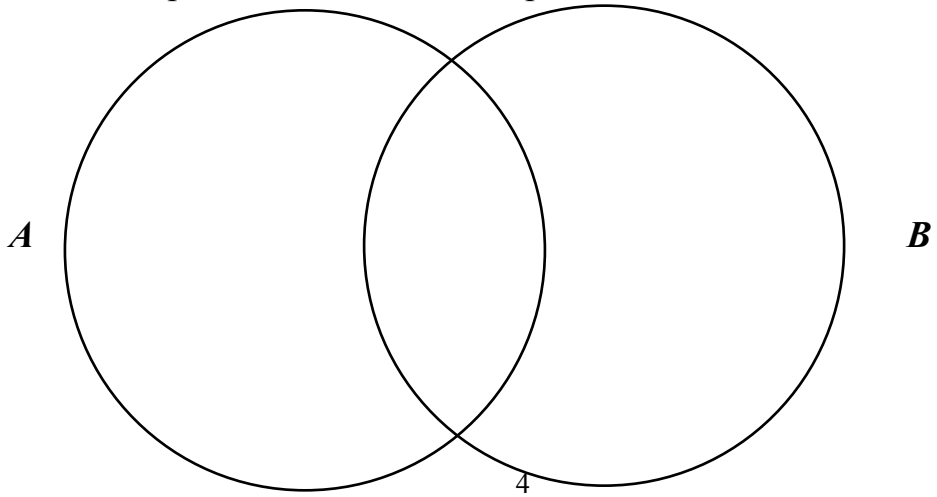
a) Name properties that can be used to sort the following shapes: _____



b) Look at the drawing below. All yellow shapes are in the set ***A;*** all squares are in the set ***B.*** Yellow squares form a set that belongs to the intersection of sets ***A*** and ***B***.



c) In circle ***A*** place all red shapes (draw those shapes using red pencil). In circle ***B*** place all circles. What shapes will be in the overlap of two sets ***A*** and ***B***?



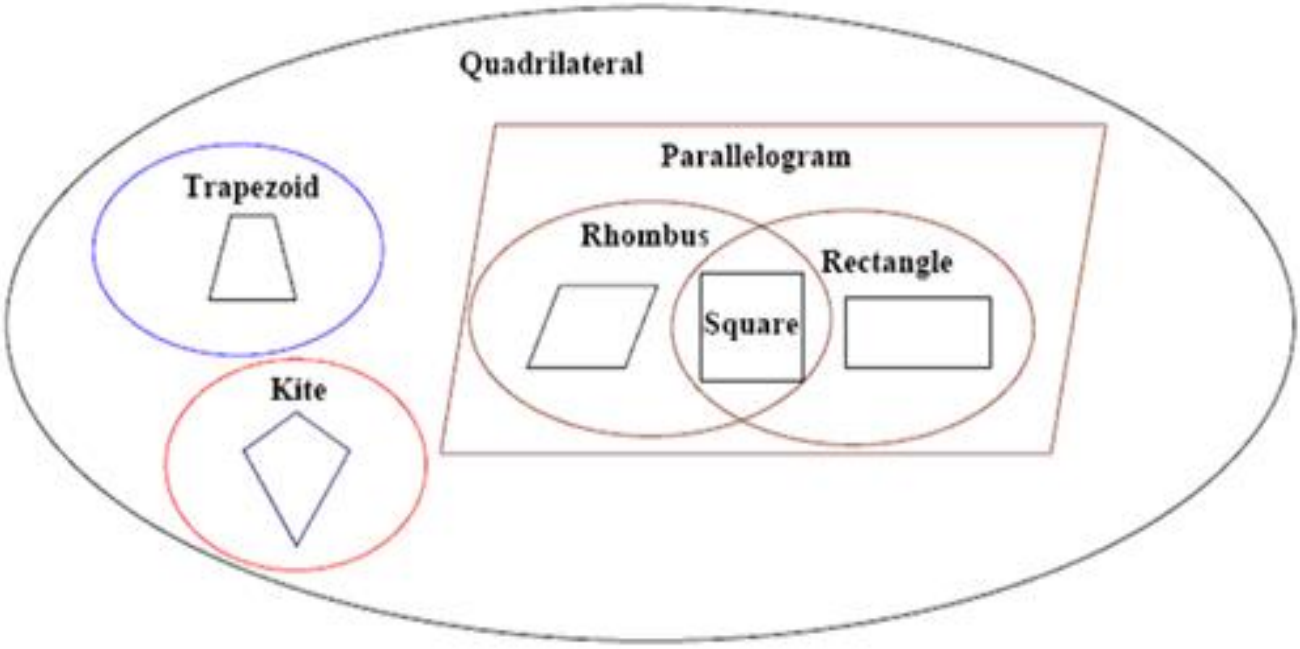
Special quadrilaterals:

Parallelogram: A quadrilateral with 2 pairs of parallel sides.

Rectangle: A parallelogram with 4 right angles.

Rhombus: A parallelogram with 4 sides of equal length.

Below is a Venn diagram for quadrilaterals:



A square has two pairs of parallel sides, therefore it is a parallelogram;

A square also has 4 right angles, so therefore it is a rectangle. A square also has 4 equal sides, therefore it is a rhombus.

REVIEW

13

There are ***m*** liters of water in a bucket and ***n*** liters in a jar. A boy poured ***c*** liters out of the bucket and ***d*** liters out of the jar. What do the expressions below mean?

m + n _____

c + d _____

m – c _____

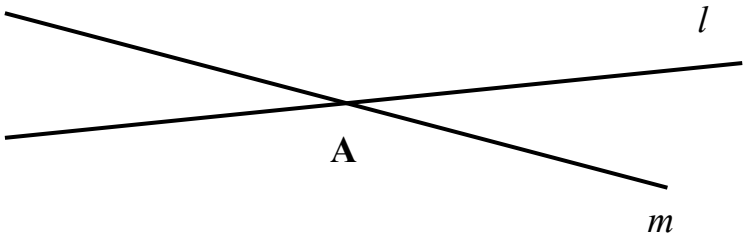
m – n _____

d – c _____

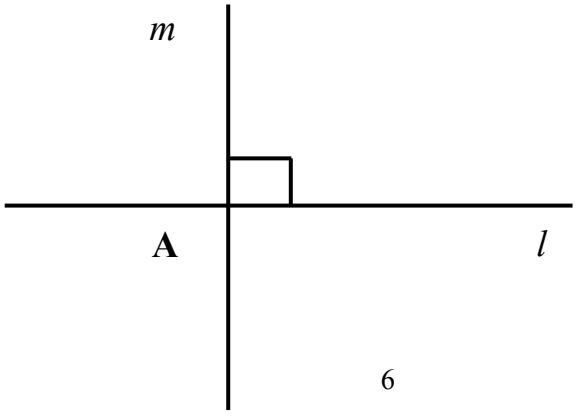
n – d _____

One line divides a plane into two parts. **Straight angles.**

Two lines divide a plane into four parts. Four angles.



If a straight line crossing another straight line makes the adjacent angles equal, then each of those angles is called a **right angle**; and straight lines are called **perpendicular** lines.

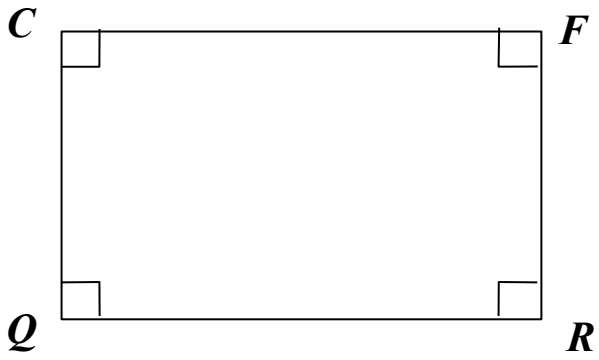


a) Write a name of the rectangle below _____

Using a ruler measure sides CF and QR _____

Using a ruler measure sides CQ and FR _____

What did you notice?

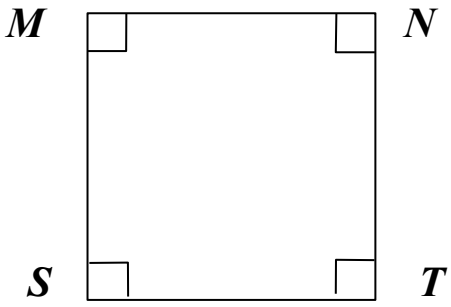


b) Write a name of the square below _____

Using a ruler measure sides CF and QR _____

Using a ruler measure sides CQ and FR _____

What did you notice?



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Challenge yourself

13. 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?

Did you know …

John Venn (4 August 1834 – 4 April 1923), was a British logician and philosopher. He is famous for introducing the Venn diagram, which is used in many fields, including set theory, probability, logic, statistics, and computer science. Venn also had a rare skill in building machines. He used his skill to build a machine for bowling cricket balls, which was so good that when the Australian Cricket team visited Cambridge in 1909, Venn's machine clean bowled one of its top stars four times.

John Venn came up with Venn Diagrams in 1880, while working in the famous University of Cambridge. With his son he wrote a two-volume history of Cambridge, and complied an extensive database of biographical information on some 136,000 Cambridge graduates and staff, from "the earliest times" to the dawn of the 20th century.