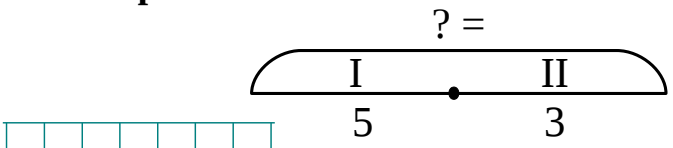
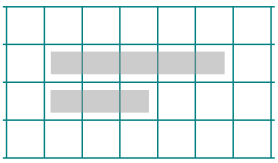
Lesson № 3

1 **Complete auxiliary drawings and write the expressions:**

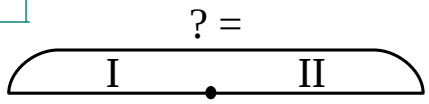
a). There are 5 books on a shelf. There are 3 books on another shelf. How many books are on both shelves?

5 + 3

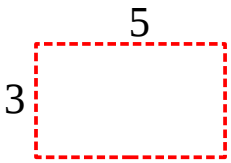


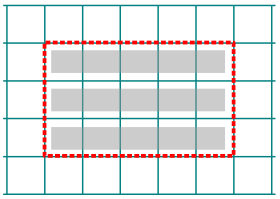


b). There are ***m*** books on a shelf. There are 3 books on another shelf. How many books are on both shelves?

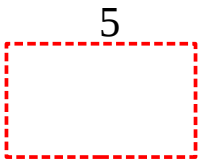


c). There are 5 books on each of 3 shelves. How many books are on these shelves in total?



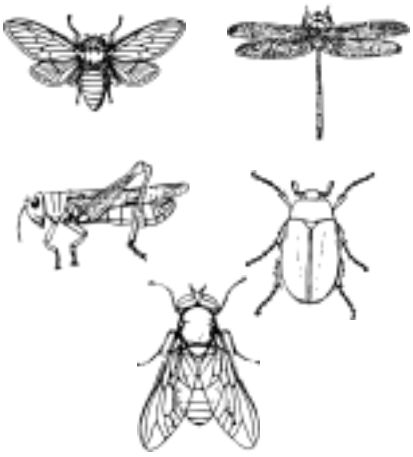


d). There are 5 books on each of ***q*** shelves. How many books are on these shelves in total?



Related Objects.

Find common name for the objects:



Sets

2

What do you call a group of birds flying together?

_____

What do you call a group of fish swimming together?

_____

What is a bouquet?

_____

What is a herd?

_____

Can you say “a herd of cups”? _____

Can you say a “bouquet of cats”? _____

Insert picture

In mathematics, objects grouped together are called a ***set.***

All objects included in a set are called ***elements*** of that set.

3 Math, English, Science belong to a set of _____
Another element of this set is _____

A Penny, a quarter, a nickel belong to a set of _____
Another element of this set is _____

A Cucumber, a pepper, an onion belong to a set of _____
Another element of this set is _____

Make your own example of a set:

A set of _____ includes _____.

A set can be defined by …
… listing its elements or by
… stating their common property.

4 Define a set by stating a characteristic of its elements:

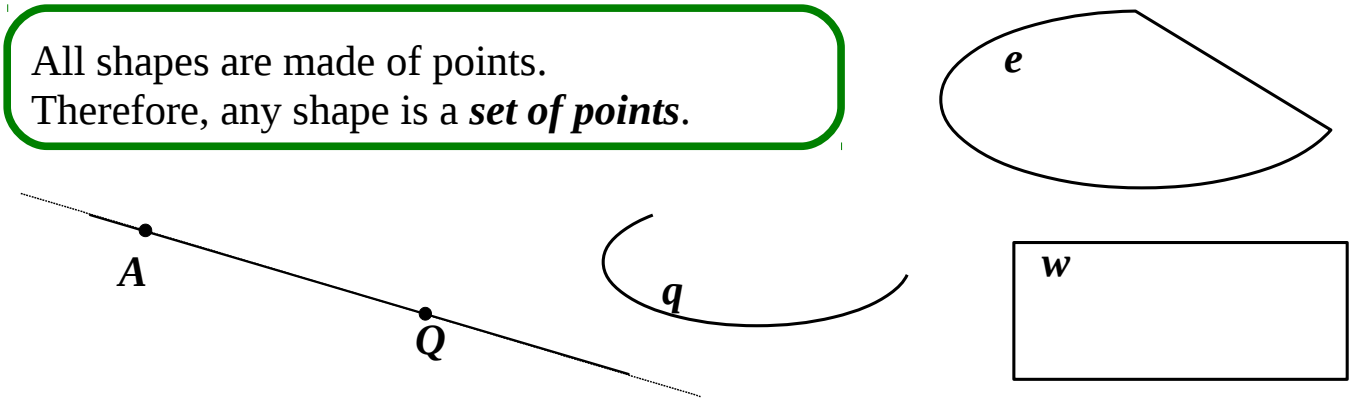
a). {0, 1, 2, 3, 4, 5, 6, 7, 8, 9} A set of _____

b). {0, 2, 4, 6, 8} A set of _____

c). {a, e, i, o, u} A set of _____

Sets in geometry.

All shapes are made of points.
Therefore, any shape is a ***set of points***.



5

How many points are labeled on straight line ***AQ***? _____

Are there any other points that belong to the line ***AQ***? _____

Label two more points on the line ***AQ***. Name these points ***P*** and ***F***.

The set of labeled points on the straight line ***AQ*** is { , , , }

Are all points on on the straight line ***AQ*** labeled?

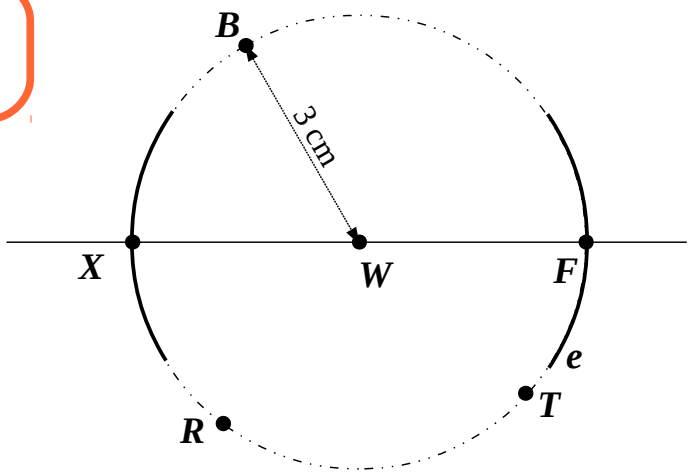
The total number of all points on the straight line ***AQ*** is _____

The shapes ***e***, ***q***, and ***w*** are consist of _____. Their number is _____ .

Circle:

Besides straight line, circle is the most important line in geometry.

A **circle** is a set of all point located on the same distance from its **center**.



Example: any point of the curve e is 3 cm away from the point W.

Therefore, the curve ***e*** is called a circle with the center at point W and radius 3 cm:

e = Circ(***W***, 3 cm)

6 The distance between points ***A*** and ***B*** is usually denoted like this: |***AB***|.

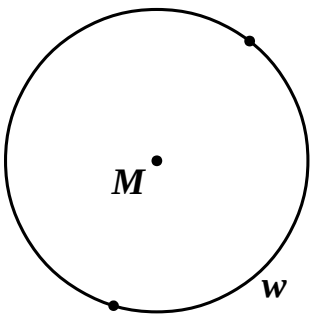
What is the distance between the points ***W*** and ***X***? |***WX***| = _____

What is the distance between the points ***W*** and ***F***? |***WF***| = _____

What is the distance between the points ***W*** and ***R***? |***WR***| = _____

What is the distance between the points ***W*** and ***T***? |***WT***| = _____

7 Curve ***w*** is a circle with center at point ***M***. Measure its radius and write the circle notation for the curve ***w***.



w = Circ (***M***, cm)

Name the two points marked on the circle ***w*** as ***N*** and ***T***.

|***MT***| = cm |***MN***| = cm

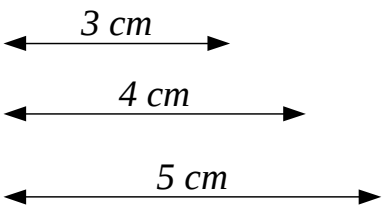
8 Use a compass to plot a …

… circle ***m*** = Circ(***A***, 4 cm)

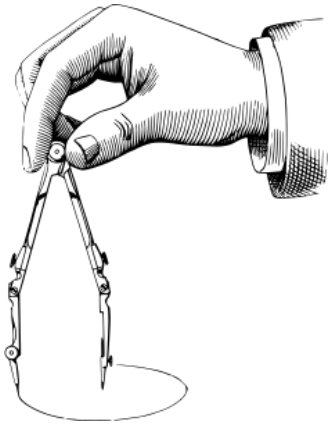
… circle ***v*** = Circ(***A***, 5 cm)

… circle ***w*** = Circ(***B***, 5 cm)

… circle ***u*** = Circ(***C***, 3 cm)



The tool for plotting circles is called a **compass**. Its purpose is to keep a fixed distance between its graphing head and the center of the plotted circle.



A

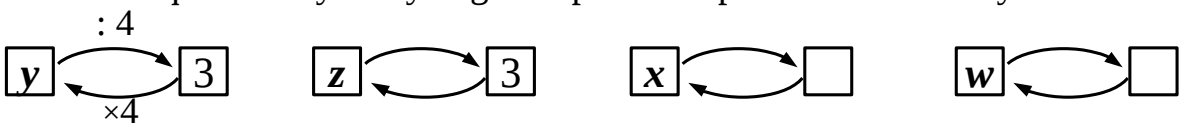
B

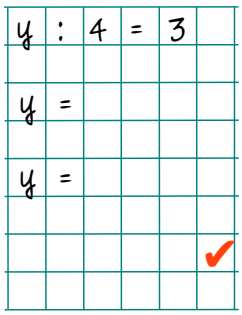
C

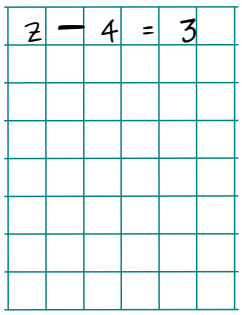
Equations:

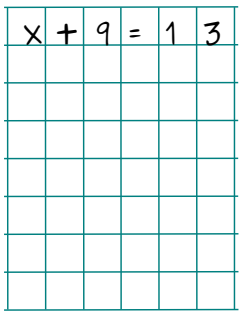
9

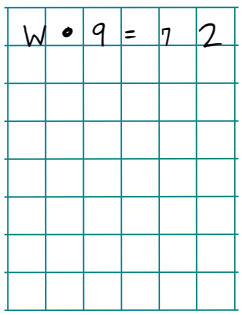
Solve the equations by analyzing the operations performed. Check your answers.











The Four Brothers:

10 The four mice are brothers. Their names are Jake the Mouse, Little Joe, Pop Eye, and Foxy Tail.

Foxy Tail always lies,
Little Joe always tells truth, and
Pop Eye and Jake the Mouse tell either truth or lie.

If you ask Little Joe how many tails he has – one or two, what will he answer?

If you ask Foxy Tail if he has any brothers, what will he answer?

Can they say the following? Explain.

LJ: I never lie.

FT: I never lie.

Insert picture