Lesson 6

1 Write the expressions for the problems below:

Draw the diagrams yourself

a) Alice hiked ***a*** km on Saturday. On Sunday she hiked another ***b*** km. How many kilometers did she hike on the weekend?

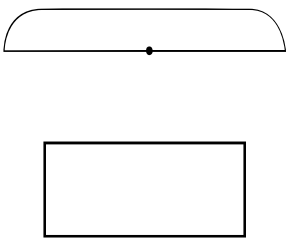
b) Alice hikes ***a*** km a day. How many kilometers will she hike in ***b*** days?

c) There are 5 fish in each of ***w*** aquariums. How many fish are there in total?

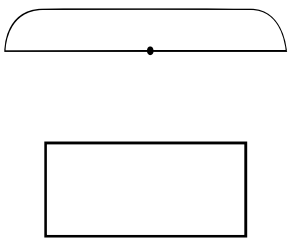
d) There are 5 fish in an aquarium. There a ***w*** fish in another one. How many fish are there in total?

2 Pick the diagram that represents each equation. Use the diagram to solve the equations and then check your answer.

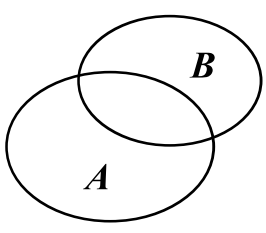
x + 12 = 21 ✓

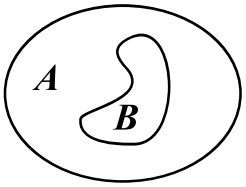


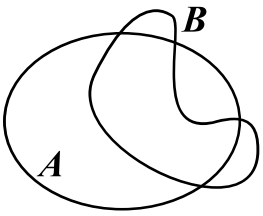
x × 9 = 63 ✓

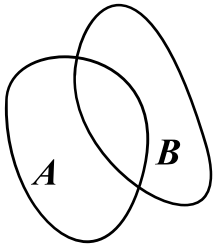


3 Color the intersections:









4 Solve without making calculations:

823 + 249 – 249 =

823 + 249 – 248 =

952 – 821 + 821 =

952 – 821 + 820 =

564 + 288 – 288 =

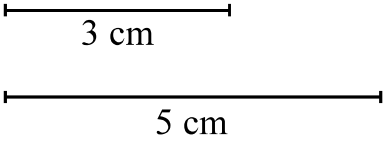
564 + 288 – 287 =

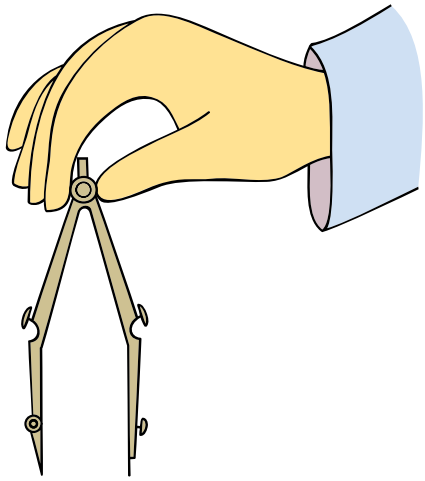
5

a) Plot ***m*** = Circ(***R***, 3 cm)

b) Plot ***k*** = Circ(***R***, 5 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.



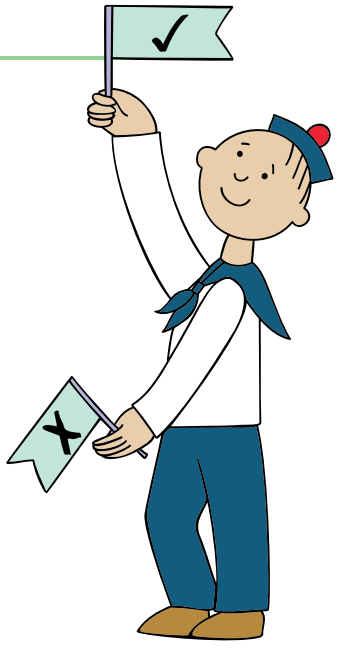


R

B

A

6 Based on your drawing above, check ✓ the TRUE statements and ✗ the FALSE statements:



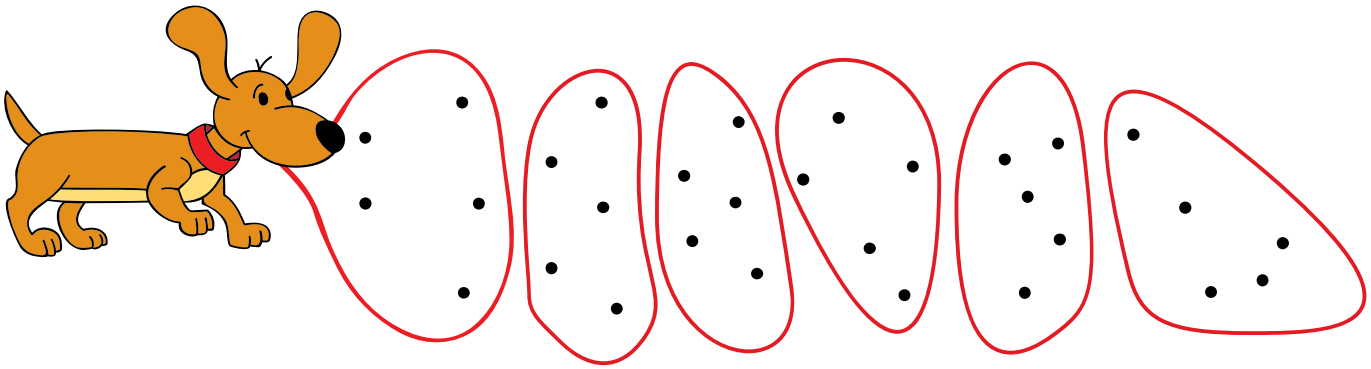
m ∩ ***AB*** ☐

|***AR***| > 3 cm ☐

k ∩ ***AB*** ☐

|***BR***| > 5 cm ☐

7 Count the points on the drawing:



There are _____ groups of points containing _____ points each.

□ × □ = 30

□ × □ = 30

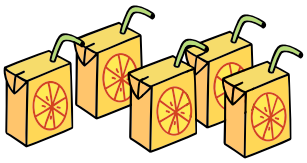
30 ÷ 5 = □

30 ÷ 6 = □

Multiplication helps to count objects by dividing them into groups of same size.

Division may have two meanings:
dividing objects a among certain **number of groups**
or dividing objects into groups of a **certain size**.

Adjustment to a Unit



There are 15 liters of juice in 5 identical bottles. How many liters of juice are in 7 such bottles?

1. 15 ÷ 5 = 3 (liters of juice in one bottle.)

2. 3 × 7 = 21 (liters of juice in 7 bottles.)

1. Divide the total by the number of units to get the size of each unit.

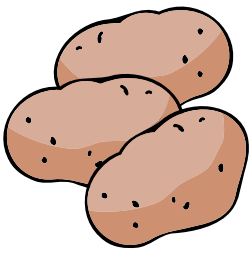
↓

2. Find the new quantity by multiplying the unit size by the number of units.

8 There are 24 kg of potatoes in 6 identical bags. How many kg of potatoes are in 7 such bags?

1. _____ kg of potatoes in each bag

2. _____ kg of potatoes in 7 bags



Properties of Intersections

9 What in the common trait of the shapes in set ***A***?

_____

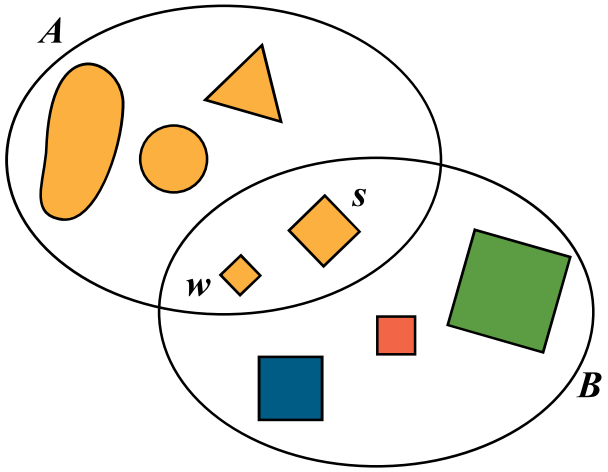
What is the common trait of the shapes in set ***B***?

_____

List the two traits of the shapes ***s*** and ***w***:

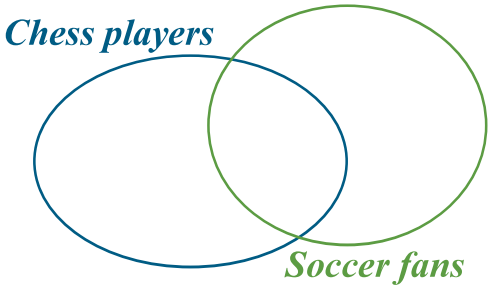
1. _____

2. _____



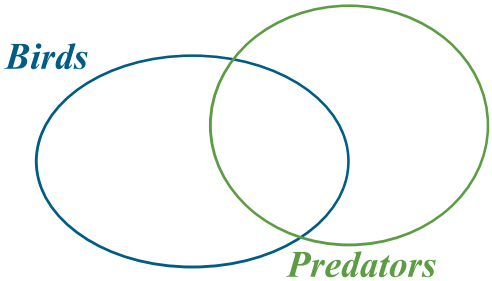
Common elements of two sets possess the **traits** or **properties** of both sets.

10 List two properties of the common elements for each pair of sets.



_____

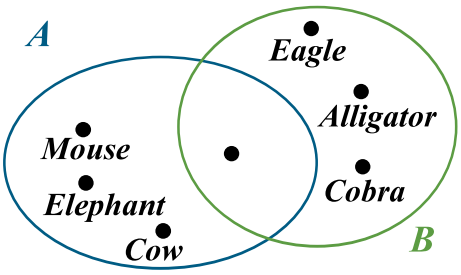
_____



_____

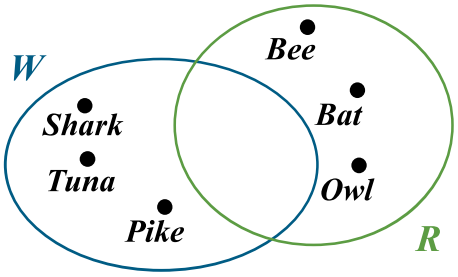
_____

$W \cap R = \{$ $\}$



_____

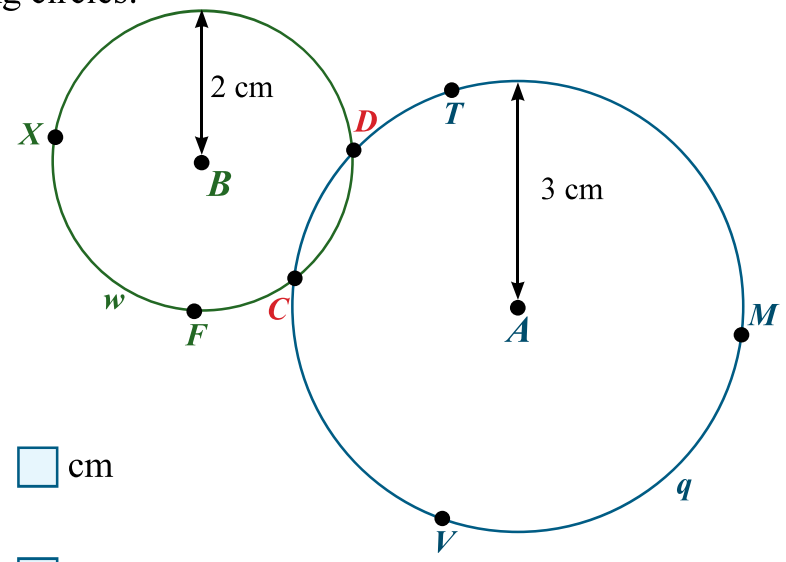
_____



_____

_____

11 Curves w and q are two intersecting circles:



w = Circle(B, 2 cm)

q = Circle(A, 3 cm)

$w \cap q = \{C, D\}$

Common Property of the Set w:

$|BX| =$ ☐ cm $\quad |BF| =$ ☐ cm

$|BC| =$ ☐ cm $\quad |BD| =$ ☐ cm

Common Property of the Set q:

$|AM| =$ ☐ cm $\quad |AT| =$ ☐ cm $\quad |AV| =$ ☐ cm

$|AC| =$ ☐ cm $\quad |AD| =$ ☐ cm

List the two properties of point D:

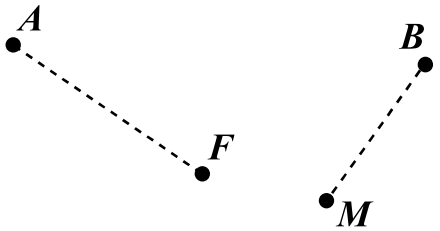
$|BD| =$ ☐ cm

Since point C belongs to both set w and set q it has properties of both sets:

1. $|BC| = 2$ cm
2. $|AC| = 3$ cm

Using Circles for Constructions

12 Use a **compass** to find **all** points located



1. 3 cm away from point F
2. 2 cm away from point M.

How many points did you find? _____

13 Foxy Tail is celebrating his birthday with a cake.

FT: *Little Joe is my big brother.*

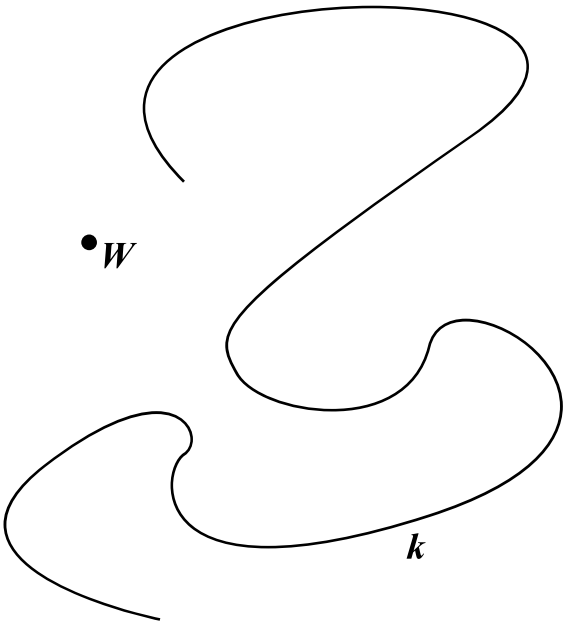
LJ: *Foxy Tail is either 3 years younger or 2 years older than me.*

How old is Foxy tail? _____

How old is Little Joe? _____

Additional Problems

14 Use a compass to find all points of curve ***k*** located 4 cm away from point ***W***.



How many points did you find? _____

How do we call the set of all points located 4 cm away from point ***W***?

_____

15 The total value of 3 identical coins is $21. What is the total value of 5 such coins?

1. _____

2. _____