STRUCTURES EXERCISES
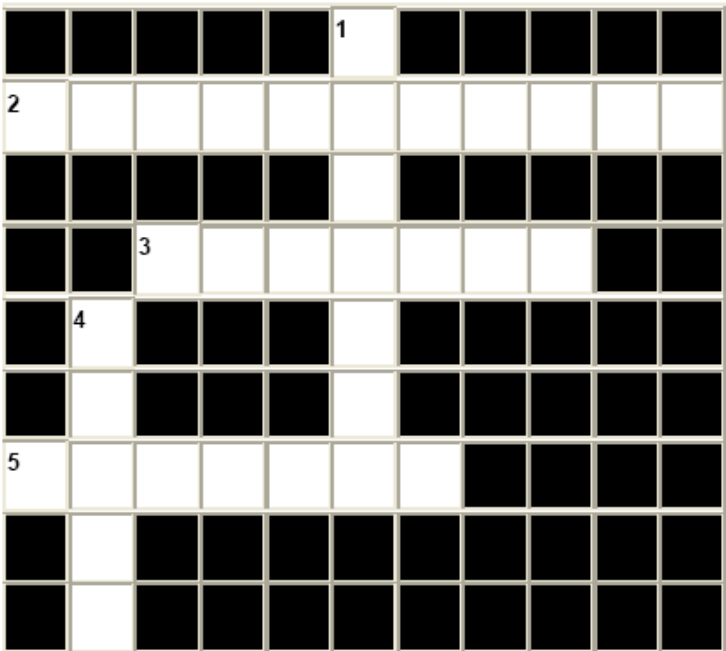
1.1. Types of forces in frame structures.

Crossword

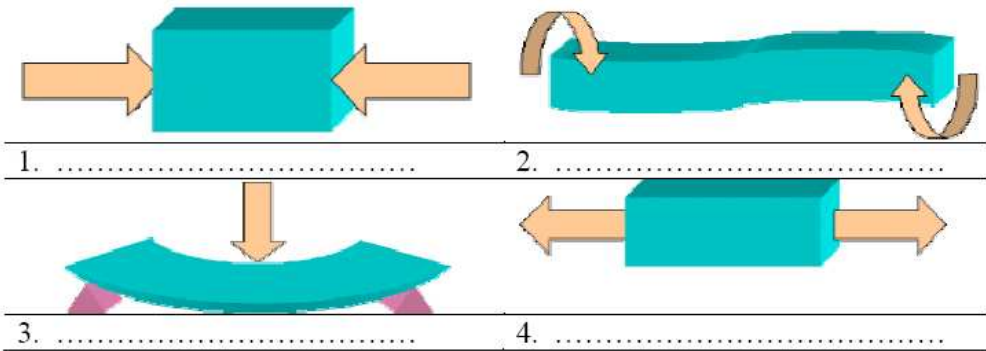
Across:

2 This kind of force tends to "squash"

3 This kind of force tends to "twist"

5 This kind of force tends to "bend"

Down:

1 This kind of force tends to "stretch"
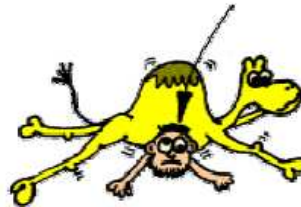
4 This kind of force tends to "cut"

1.2. Write the force represented in each graphic.

1. ....

2. ....

3. ....

4. ....

1.3. Look at the following pictures and identify what kind of force or load is being done.

1. ....   2. ....
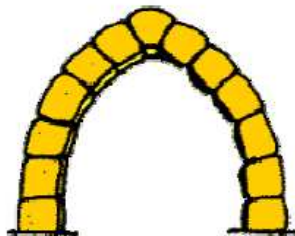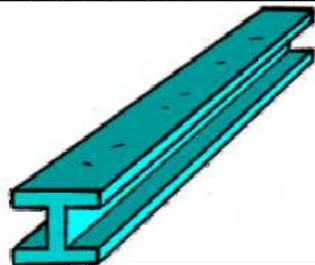

2. STRUCTURAL ELEMENTS.

2.1. Write the name of the structural elements shown below.

1. ....   2. ....

3. ....   4. ....
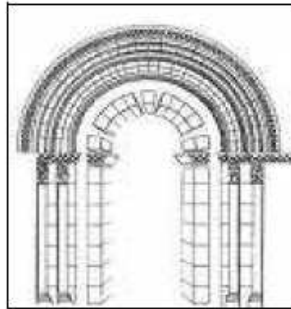
2.2. Join the structural element with the representative picture and the right definition.

Columns

- The weight is carried down along two curving paths

Beams

- Long thin piece of metal supporting a part of a building or structure.

Arches

- These are vertical elements designed to support horizontal loads and transmit the forces to the ground.

Struts

- These are horizontal elements designed to support bending, produced by vertical forces.

3. TYPES OF STRUCTURES.

3.1. Find the five types of structures shown in class.

M	A	S	D	F	S	G	H	J	L
A	A	Q	W	E	R	H	T	Y	U
N	Z	F	M	X	C	V	E	B	N
U	M	A	A	S	D	F	G	L	A
F	S	D	S	C	Z	X	C	V	L
A	F	Z	S	X	T	C	V	B	N
C	R	M	Z	D	A	U	S	D	F
T	A	Q	W	E	R	T	R	Y	U
U	M	A	S	D	F	G	H	E	J
R	E	D	V	B	N	M	H	U	D
E	Q	N	A	T	U	R	A	L	E
D	S	F	G	H	J	K	L	R	T

3.2. Write a definition for each type of structure

Laminated	
Framework	
Natural	
Massive	
Manufactured	

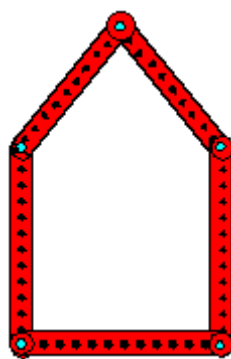## 3.3. Write the type of structure (natural or manufactured).

1. ....

2. ....

3. ....

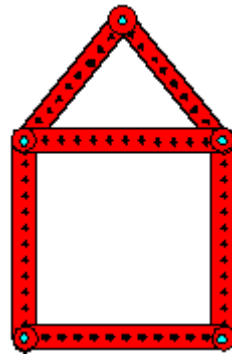4. ....
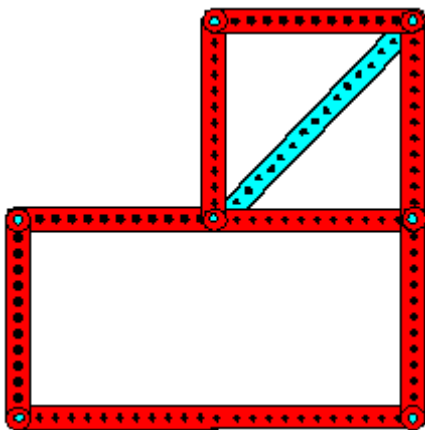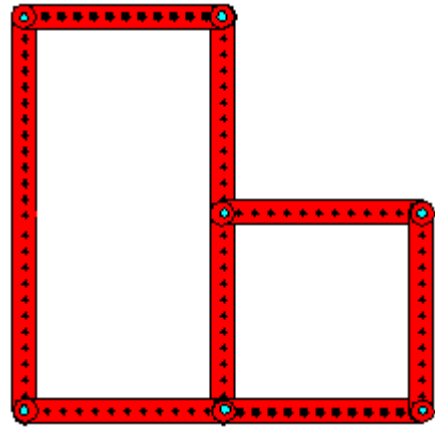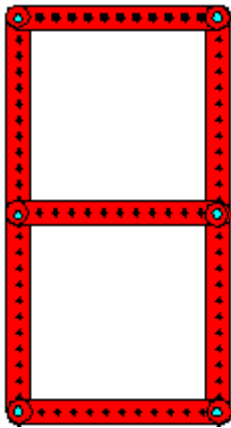
Identify each element:
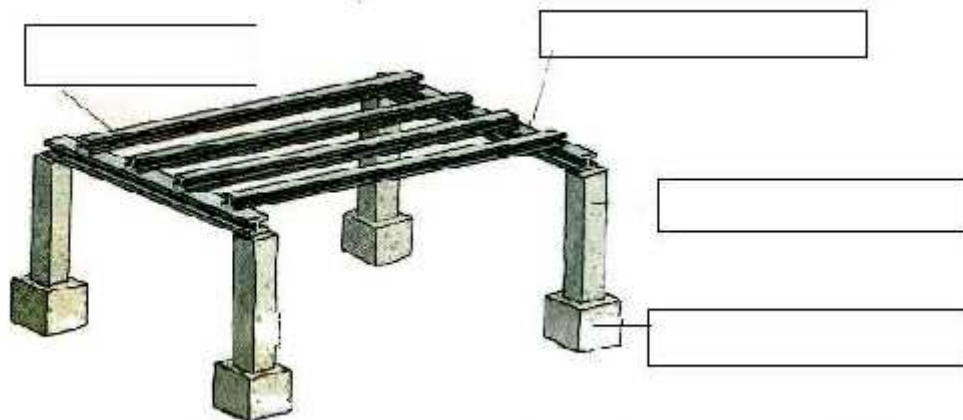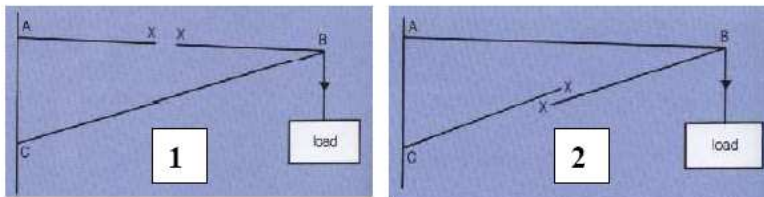
Identify the forces shown in the sketch.

(a)

(b)

(c)
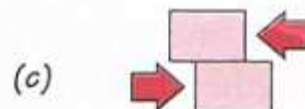
Activity: Copy these structures in your notebook. Which of these structures is stable and which is non-stable?. What can you do to make them rigid?.
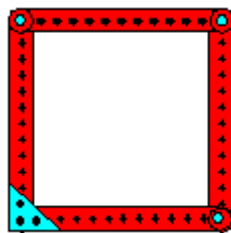
4. ANALYSING STRUCTURES.

4.1. Write the type of load in each case.

4.2. What kind of load is acting on each member of this structure?