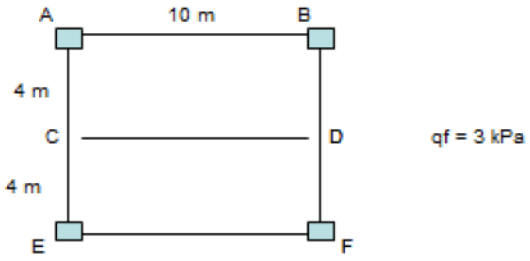
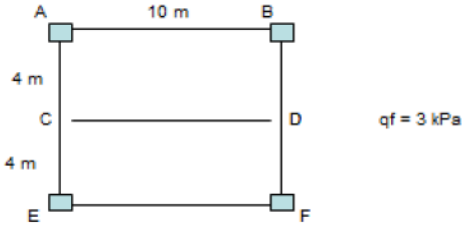
## ONE-WAY load distribution examples

**Example #1 :** *Find the loading on members CD, AB, BF if the factored pressure load on the slab is* ***3kPa***.




Do we have one-way action ?

Visualize flow of forces :

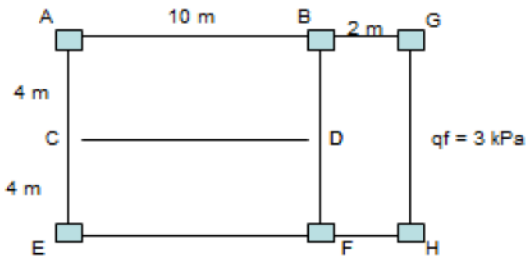



*Loading on member CD:*

*Loading on member AB:*

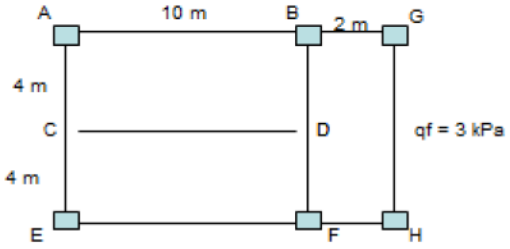
*Loading on member BF:*

**Example # 2 :** *Find the loading on member BF if the factored pressure load on the slab is 3kPa.*




Do we have 1-way action?

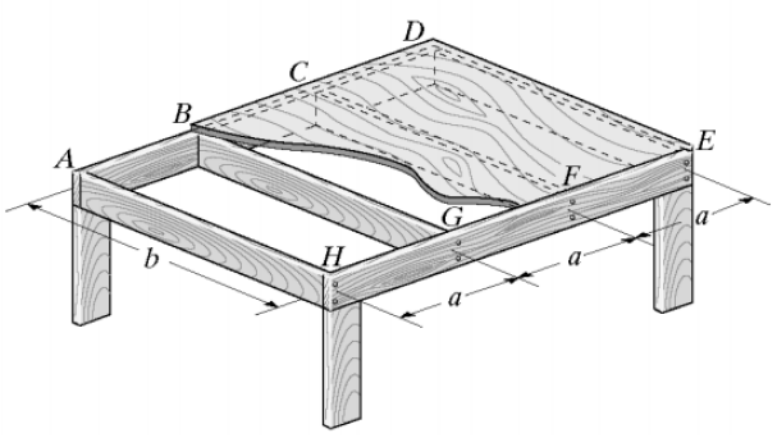
Visualize flow of forces




*What are members AB, CD supporting?*

*What is member BF supporting?*

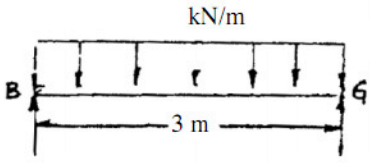
TWO-WAY load distribution examples

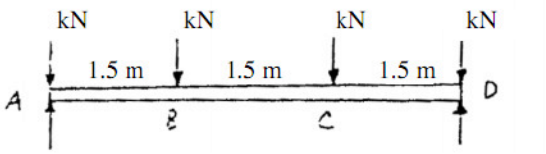


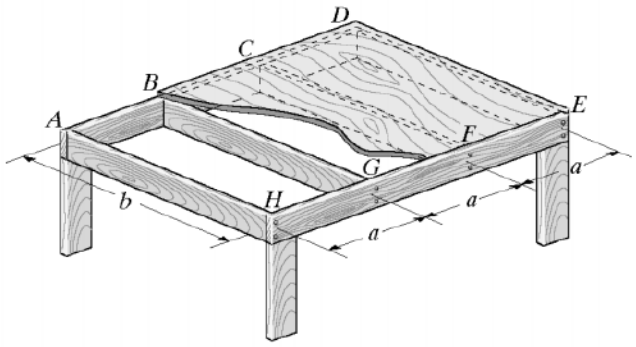

## Example #1 :

*Find the loading on members BG and AD:*

- *if the factored pressure load on the slab is 2kPa.*
- If b = 3 m, a = 1.5 m



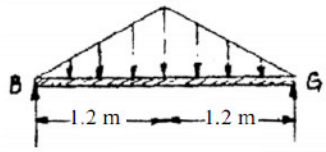



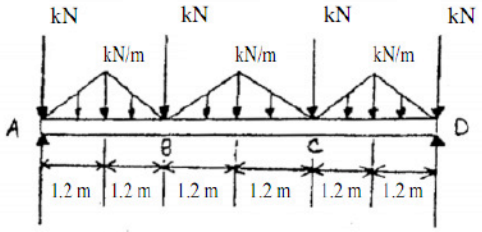


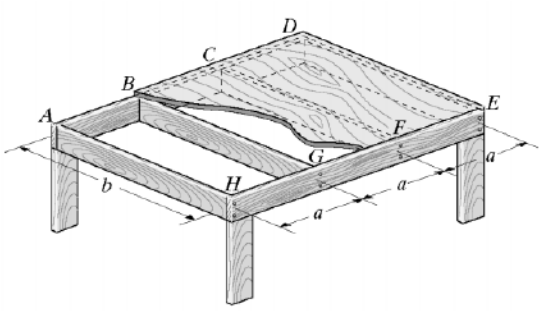

## Example #2 :

*Find the loading on members BG and AD*

- *if the factored pressure load on the slab is 2kPa.*
- If b = 2.4 m, a = 2.4 m



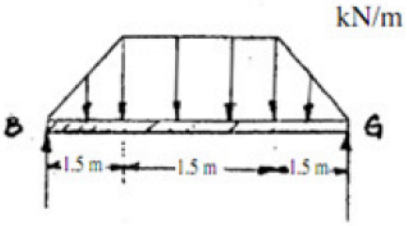



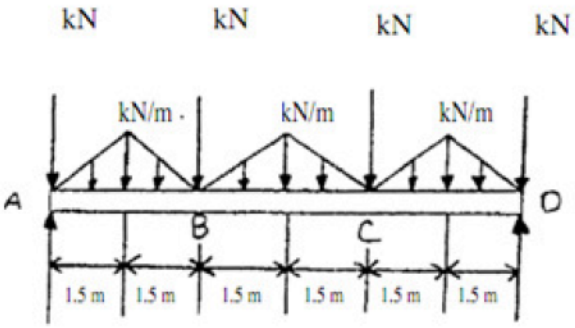



**Example #3 :**

*Find the loading on members BG and AD*

- *If the factored pressure load on the slab is 2kPa.*
- If b = 4.5 m , a = 3 m



# EXAMPLES
## Load distribution Columns and slabs

1. Column examples

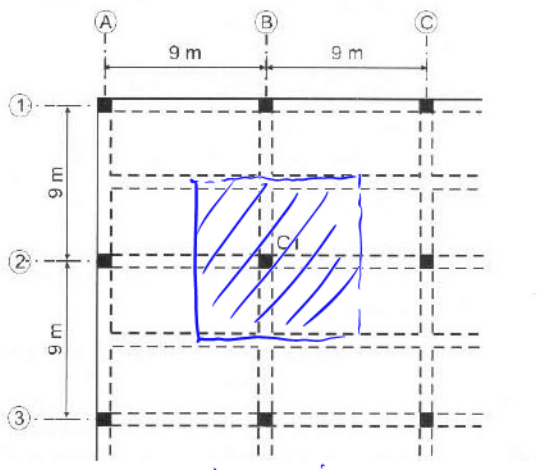
***Example #1:*** The figure below shows a plan view of the structural system for the roof of a single-story reinforced concrete building. Calculate the factored load that must be supported by column C1 if the roof supports a specified dead load of 3KPa, a specified live load of 1KPa and a specified snow load of 2 KPa (all loads are specified; i.e. unfactored).

Pf

roof

Elevation view

Consider the following 3 load cases only:
1.4D
1.25D+1.5L+0.5S
1.25D+1.5S+0.5L



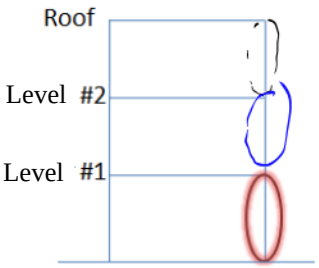

Plan view

***Example #2:*** The figure below shows an elevation and plan view of a multi-story reinforced concrete office building in Montreal. Calculate the factored load that must be supported by column C1at the ground level if the various levels support the following specified loads:

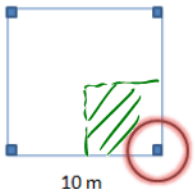
- Roof: dead load = 4 kPa, Live load = 1kPa, Snow load = 2.5 kPa
- Levels 1 and 2: dead load = 6 kPa, Live load = 2.4 kPa

Consider the following 3 load cases only:

- 1.4D
- 1.25D+1.5L+0.5S
- 1.25D+1.5S+0.5L




**ELEVATION view**




**PLAN view**