M R
Ahmed Mahdy

فيزياء	استاتيكا
دوائر كهربية	الكـــترونيات
ميكانيكا الانشائات	هيدروليكا

مدرس خصوصي

اونلاين حضوري

يحصل الطالب علي

- مقاطع فيديوهات لشرح المقرر بشكل وافي
- ملخص للمادة Pdf للمذكرة والمراجعة
- محاضرات مباشرة علي برنامج زووم
- لمناقشة الأجزاء الغير مفهومة
- تواصل مستمر مع معلم المادة

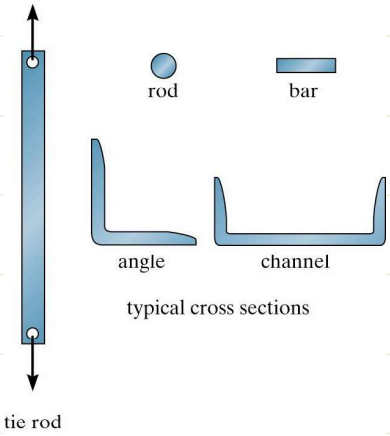
للتواصل

0567630097

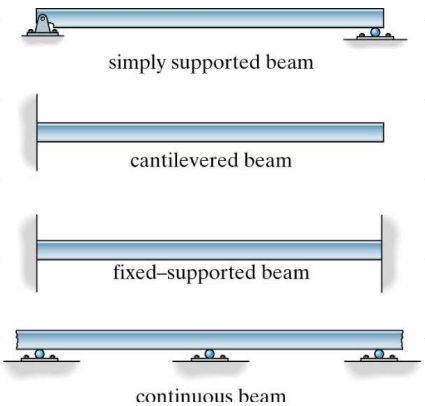
0565657741

INRODUCTION

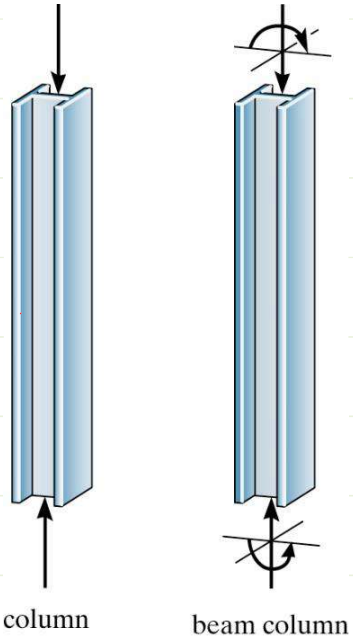
- Tie rods



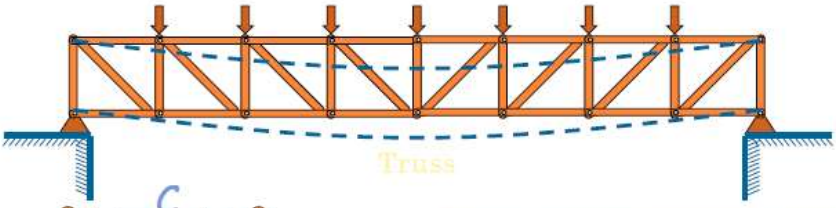
- Beams

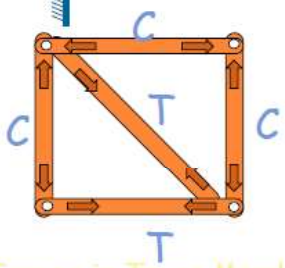


- Columns



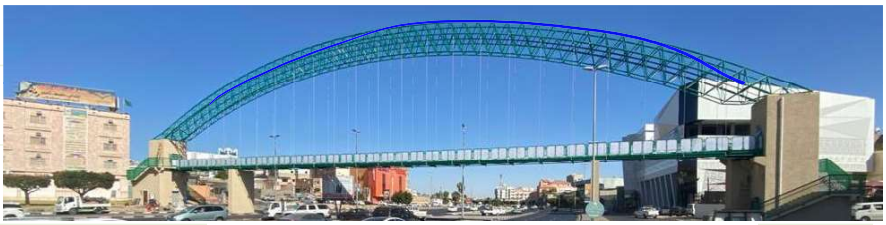
Types of Structures:

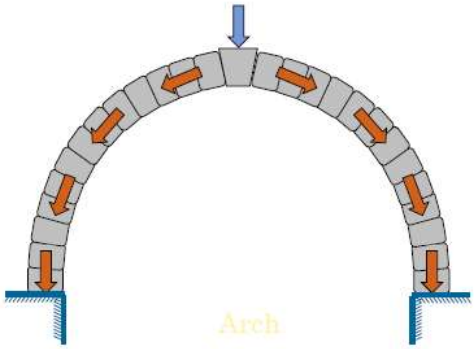




Forces in Truss Members

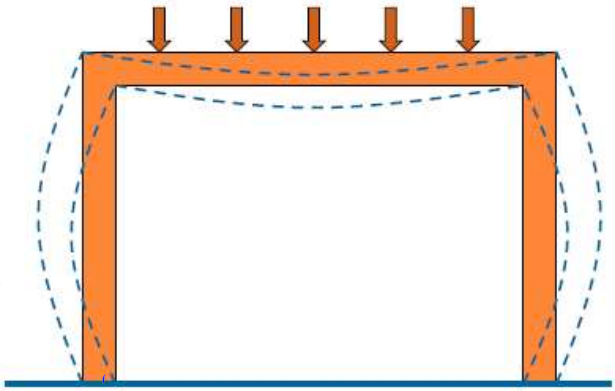
2. Cables & Arches





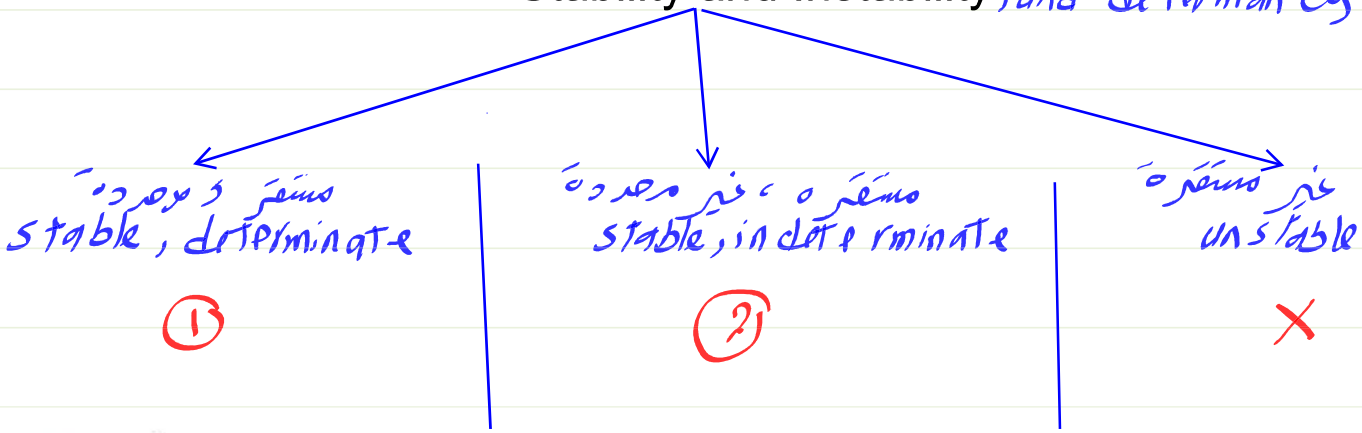
Arch

3. Frames



4. Surface Structures

Stability and Instability



In general:

number of unknowns	<	number of equations	Unstable
number of unknowns	=	number of equations	Stable & Determinate
number of unknowns	>	number of equations	Indeterminate

Determinacy and Stability

- **Determinacy**

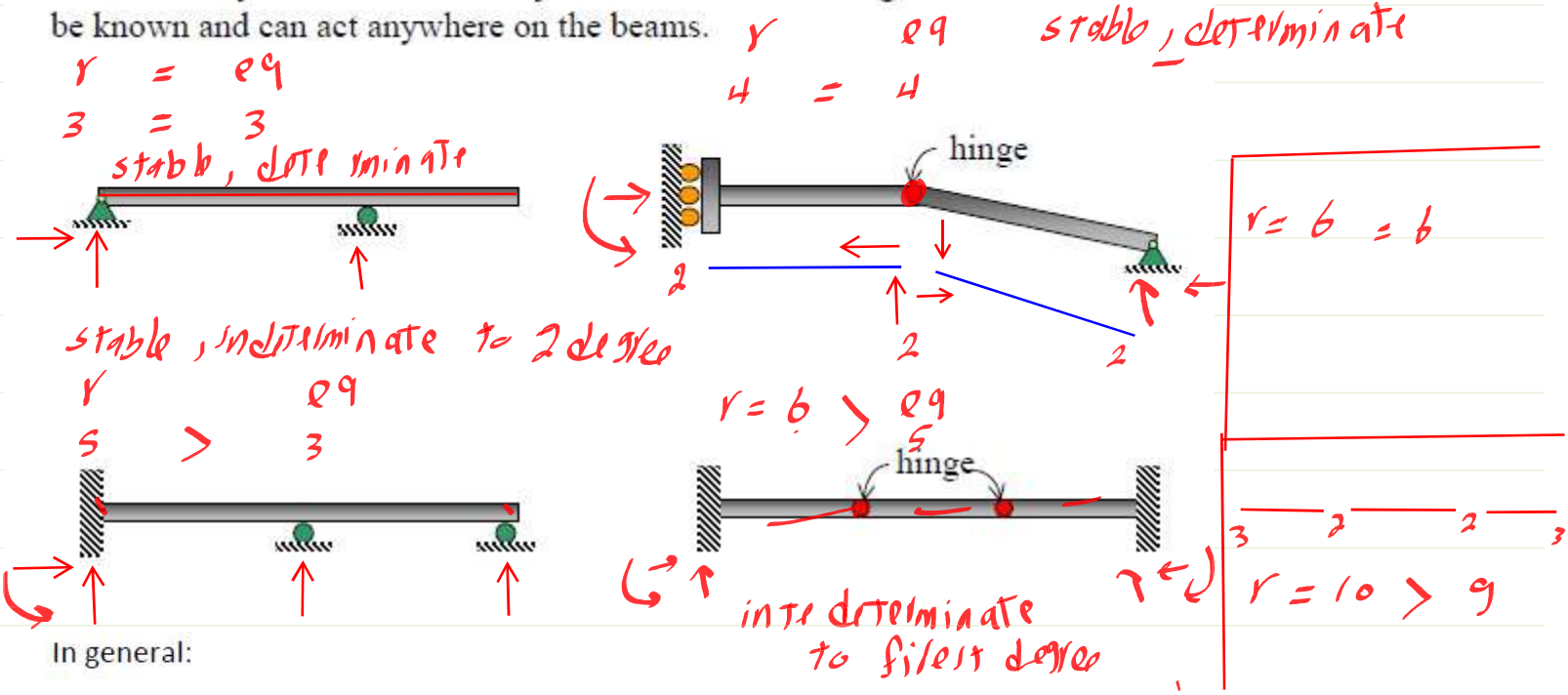
$r = 3n$, statically determinate

$r > 3n$, statically indeterminate

n = the total parts of structure members.
r = the total number of unknown reactive force and moment components

Example 2-1

Classify each of the beams shown below as statically determinate or statically indeterminate. If statically indeterminate, report the number of degrees of indeterminacy. The beams are subjected to external loadings that are assumed to be known and can act anywhere on the beams.



In general:

If			The structure is
number of unknowns	<	number of equations	Unstable
number of unknowns	=	number of equations	Stable & Determinate
number of unknowns	>	number of equations	Indeterminate

$r = 3n$, statically determinate

$r > 3n$, statically indeterminate

Example 2-2

Classify each of the pin-connected structures shown in figure below as statically determinate or statically indeterminate. If statically are subjected to arbitrary external loadings that are assumed to be known and can act anywhere on the structures.