

## 1.-Determine longitud de cada barra y peso total de la cercha descrita

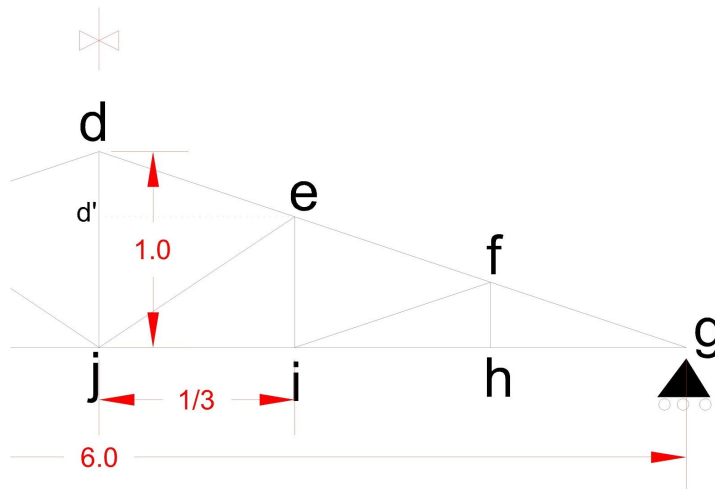
Determinamos longitud **dg**:

$$\tan^{-1} g^{\circ} = 1/3 = 18.43^{\circ}$$

$$\cos 18.43^{\circ} = 3/dg = 3.162m$$

por tanto,

$$\underline{de} = \underline{ef} = \underline{fg} = 3.162 / 3 = 1.054m$$



Determinamos **ie = d'j**, trazando el triangulo rectangulo **d'-d-e**:

$$\underline{de} = 1.054m$$

$$\underline{d'e} = 1.0m$$

$$\underline{d'd} = ?$$

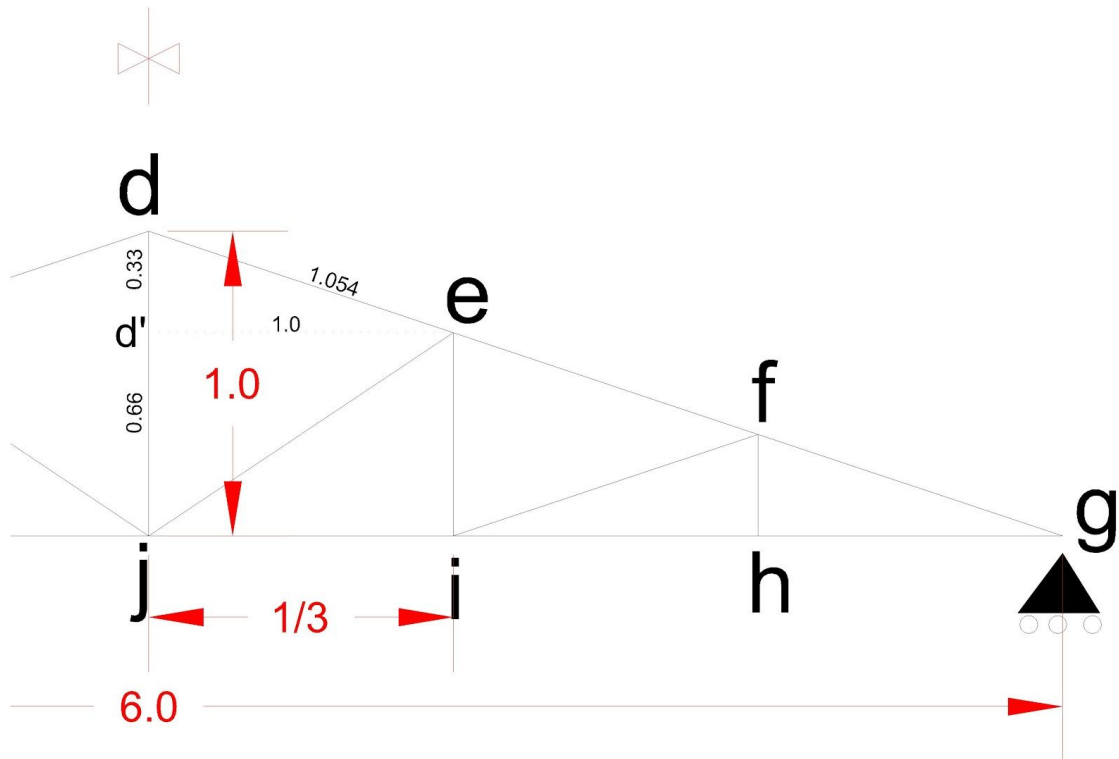
$$e^{\circ} = 18.43^{\circ}$$

$$\text{sen } 18.43^{\circ} = \underline{d'd} / 1.054$$

$$\underline{d'd} = 0.33m$$

por tanto,

$$\underline{ei} = 1 - 0.3332 = 0.6667m$$



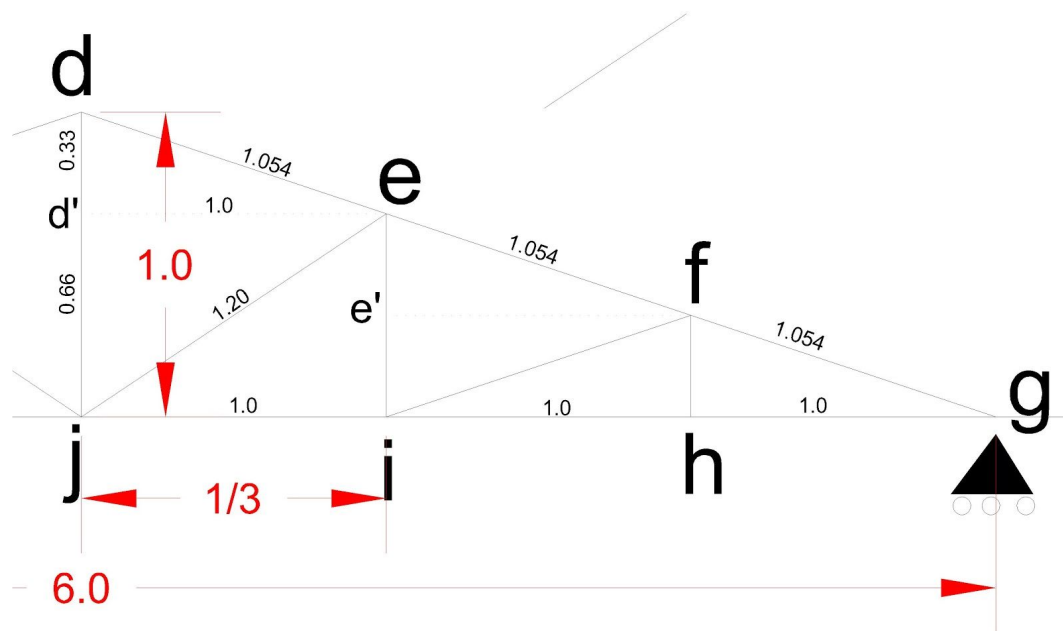
Determinamos **je**

$$\underline{je} = 0.6667\text{m}$$

$$\underline{ji} = 1.0\text{m}$$

$$\tan^{-1} j^p = 0.6667/1 = 33.69^\circ$$

$$\cos 33.69^\circ = 1/\underline{je} = 1.20\text{m}$$



Determinamos  $\underline{fh} = \underline{e'i}$ , trazando el triangulo rectangulo  $\underline{e'-e-f}$ :

$\underline{ef}=1.054\text{m}$

$\underline{e'f}=1.0\text{m}$

$\underline{e'e}=?$

$\underline{f^\circ}=18.43^\circ$

$\text{sen } 18.43^\circ = \underline{e'e}/1.054$

$\underline{e'e}=0.33\text{m}$

por tanto,

$\underline{fh}=0.66-0.33=0.33\text{m}$

Determinamos  $\underline{if}$

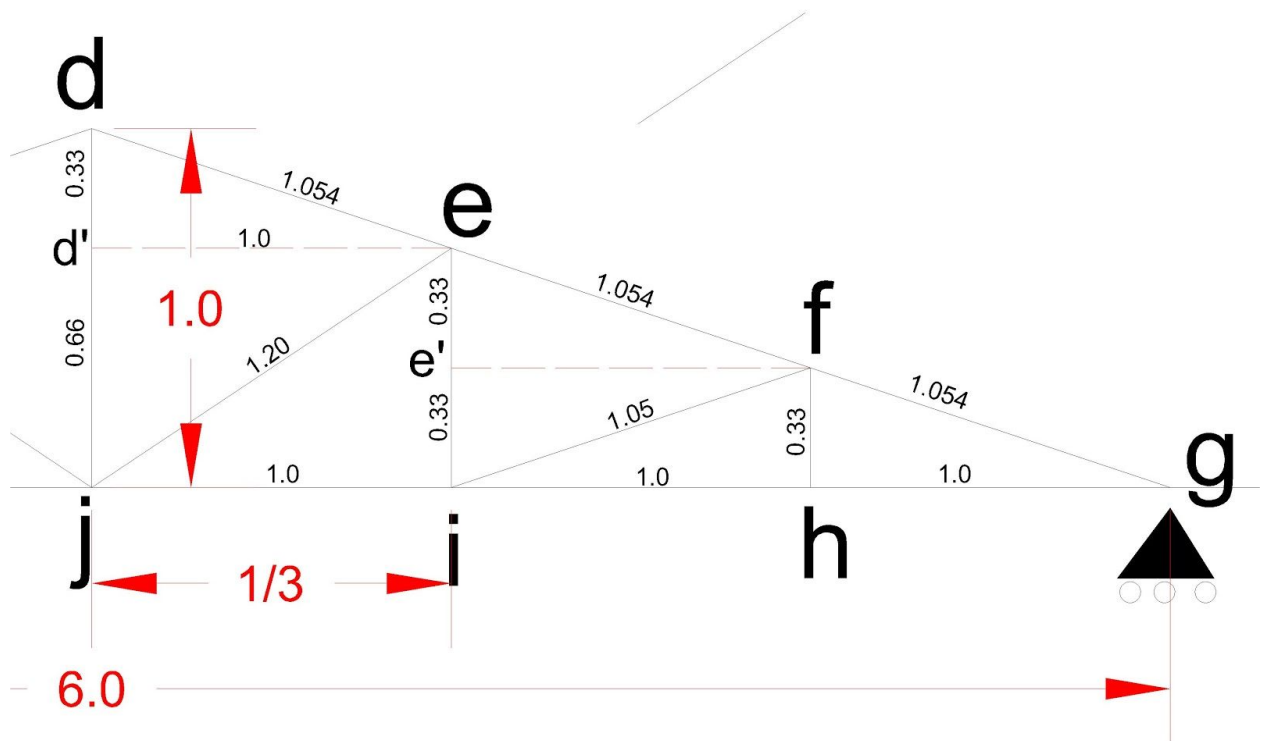
$\underline{fh}=0.33\text{m}$

$\underline{if}=?$

$\underline{ih}=1\text{m}$

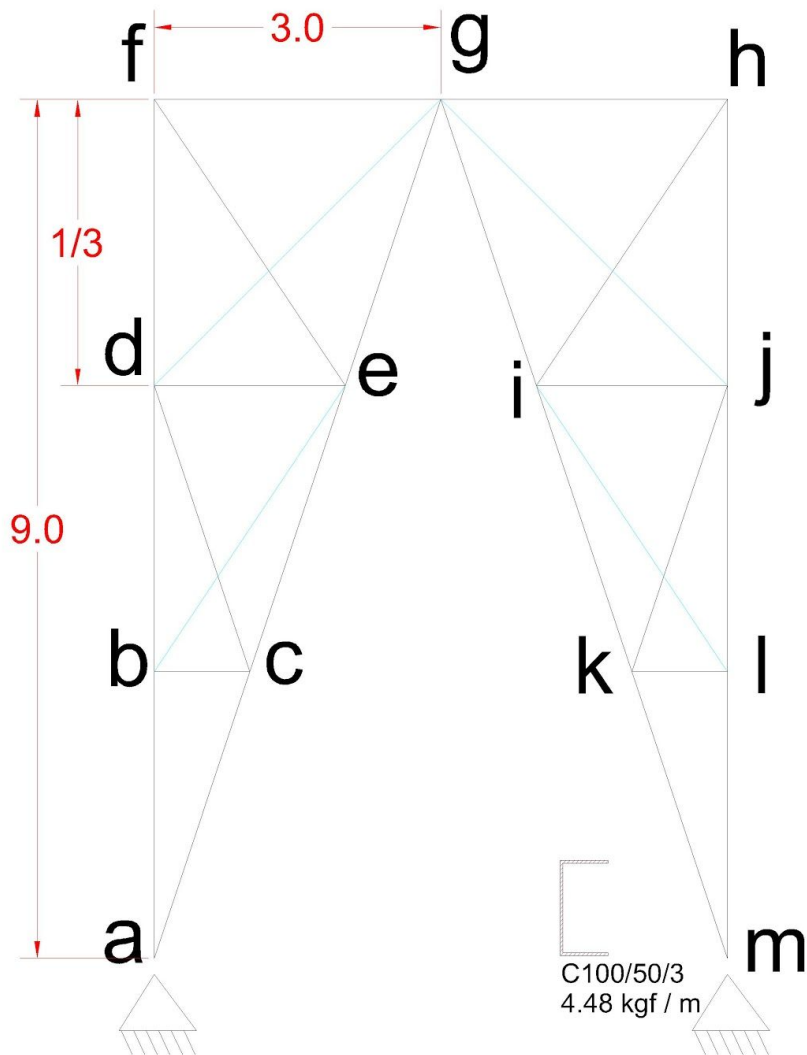
$\tan^{-1} \underline{f^\circ} = 0.33/1 = 18.2^\circ$

$\cos 18.2^\circ = 1/\underline{if} = 1.05\text{m}$



Sumando todos los tramos obtenemos **Largo total 10.4m,**  
**Peso total de la cercha=  $10.4m \cdot 4.48kgf/m = 46.59 \times 2 = 93.184kgf$**

2.-Calcule longitud de las barras dg, be , gi , il y su peso.



## 2.-Calcule longitud de la barra em y su VOLUMEN.

densidad acero 7850 kg/m<sup>3</sup>

