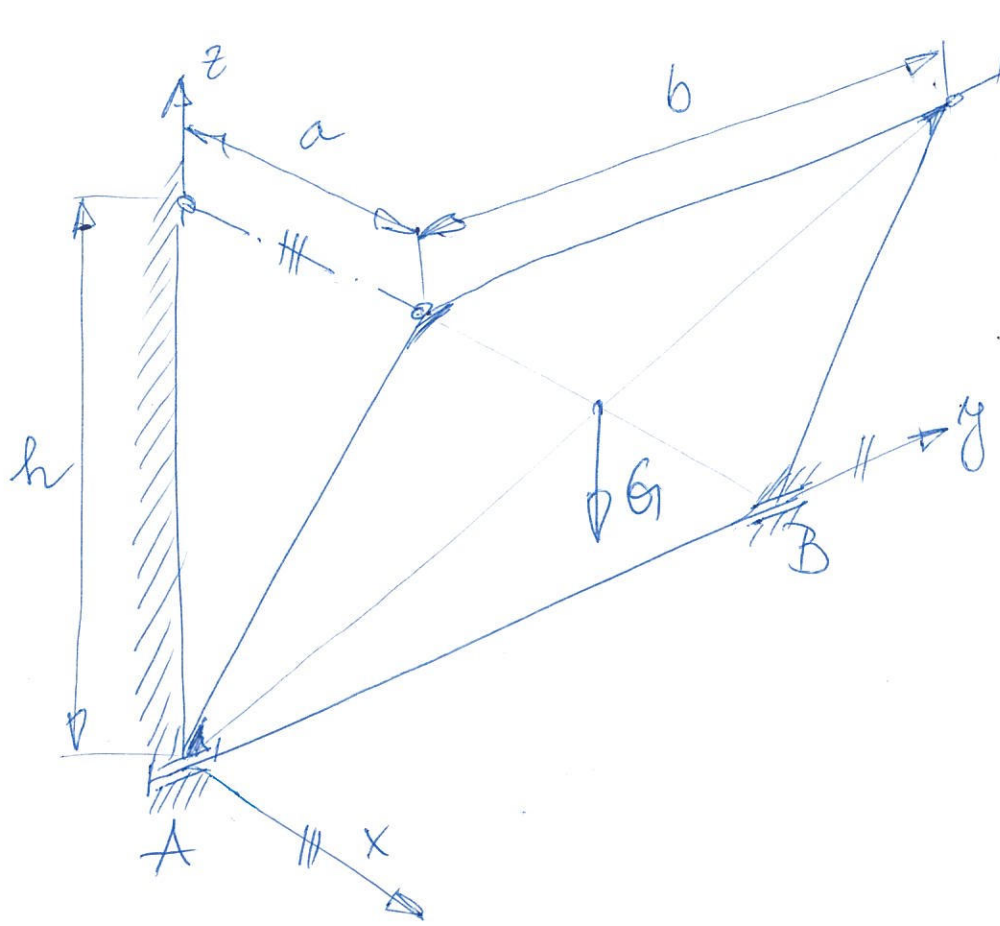


$a = 0{,}6\ m$

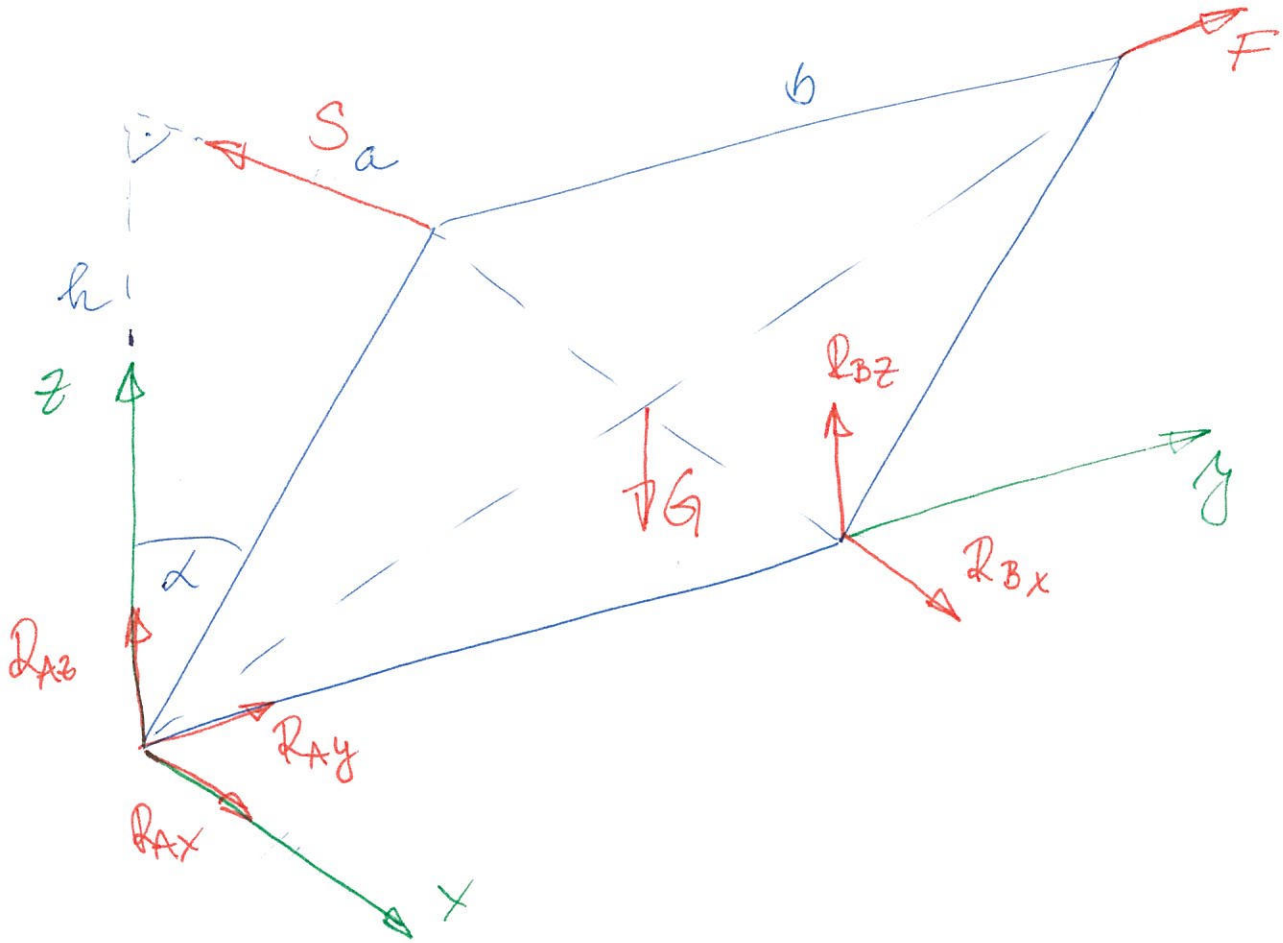
$b = 1\ m$

$h = 1{,}3\ m$

$F = 200\ N$

$G = 350\ N$

- Určete reakce ve vazbách A a B
- Určete sílu v laně



$$tg\,\alpha = \frac{a}{h} \Rightarrow \alpha = arctan\left(\frac{a}{h}\right)$$

$$\sum F_{ix} = 0: \quad R_{AX} + R_{BX} - S = 0$$

$$\sum F_{iy} = 0: \quad R_{AY} + F = 0$$

$$\sum F_{iz} = 0: \quad R_{AZ} + R_{BZ} - G = 0$$

$$\sum M_{ix} = 0: \quad R_{BZ} \cdot b - G \frac{b}{2} - F \cdot h = 0$$

$$\sum M_{iy} = 0: \quad G \cdot \frac{a}{2} - S \cdot h = 0$$

$$\sum M_{iz} = 0: \quad F \cdot a - R_{BX} \cdot b = 0$$

R_{Ax}	R_{Ay}	R_{Az}	R_{Bx}	R_{Bz}	S			
1	~~0~~	~~0~~	1	~~0~~	−1	R_{Ax}	=	~~0~~
	1					R_{Ay}		$-F$
		1		1		R_{Az}		G_1
				b		R_{Bx}		$G_1\frac{b}{2}+Fh$
					$-h$	R_{Bz}		$-G_1\frac{a}{2}$
			$-b$			S		$-F\cdot a$

```
%reseni rovnovahy prostoroveho telesa
clear all, close all, clc;


a=0.6; %m
b=1; %m
h=1.3; %m
F=200; %N
G=350; %N

A=[1 0 0 1 0 -1;
   0 1 0 0 0 0;
   0 0 1 0 1 0 ;
   0 0 0 0 b 0;
   0 0 0 0 0 -h;
   0 0 0 -b 0 0];

b=[0 -F G G*b/2+F*h -G*a/2 -F/2]';

R=inv(A)*b

% R =
%    1.0e+002 *
%    -0.192307692307692   RAx
%    -2.000000000000000   RAy
%    -0.850000000000000   RAz
%     1.000000000000000   RBx
%     4.350000000000000   RBz
%     0.807692307692308   S
```