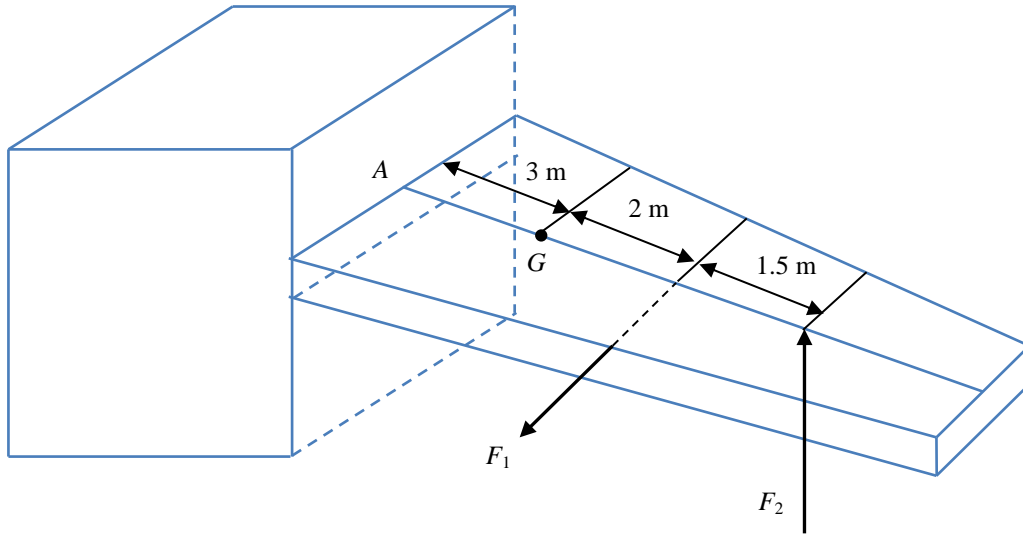


11. A slab is subjected to two independently and normally distributed forces $F_1 \sim N(100, 5^2)$ N and $F_2 \sim N(50, 2.5^2)$ N. If the mass of the slab is $m \sim N(50, 1.5^2)$ kg, determine the x, y, z components of the reaction at A where the slab is fixed to the box. Assuming the thickness of the slab is negligible.



Answer

$$\mu_{A_x} = 100 \text{ N}$$

$$\sigma_{A_x} = 5$$

Ans.

$$\mu_{A_z} = 440.5 \text{ N}$$

$$\sigma_{A_z} = 14.9$$

Ans.

$$\mu_{M_x} = 1146.5 \text{ N}$$

$$\sigma_{M_x} = 47$$

Ans.

$$\mu_{M_z} = 500 \text{ N}$$

$$\sigma_{M_z} = 25$$

Ans.