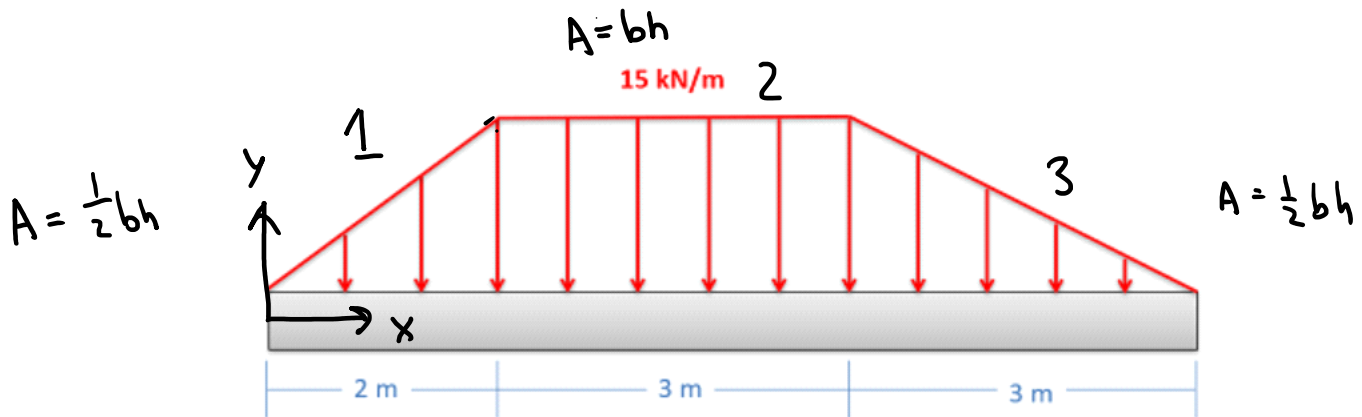# Problem 1

Determine the magnitude and location of the equivalent point load for the distributed force shown below using composite parts.

Shape	Area (kN)	$\bar{X}$ (m)	
1	15	1.33	$\leftarrow 2-\frac{2}{3}$
2	45	3.5	$\leftarrow 2+\frac{3}{2}$
3	22.5	6	$\leftarrow 5+\frac{3}{3}$

$$F_{eq} = 15 + 45 + 22.5 = \boxed{82.5 \text{ kN}}$$

$$X_{eq} = \frac{(15)(1.33) + (45)(3.5) + (22.5)(6)}{82.5} = \boxed{3.79 \text{ m}}$$