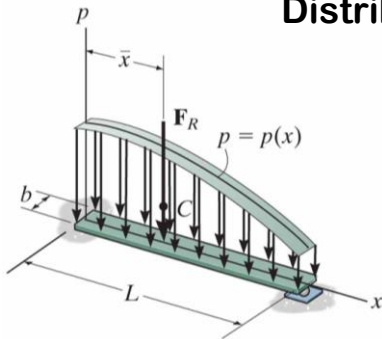
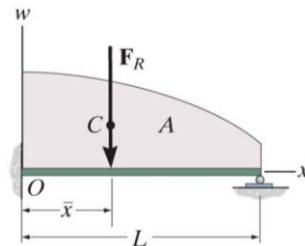
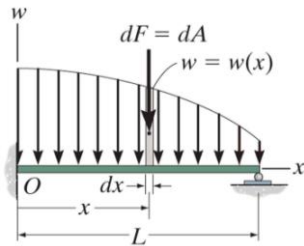


Distributed Loading

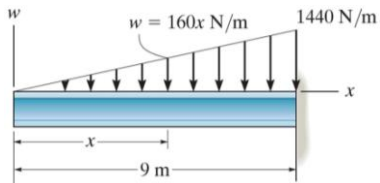


- Represented by pressure function p .
- If load varies only in x direction, use intensity function $w(x) = b p(x)$.

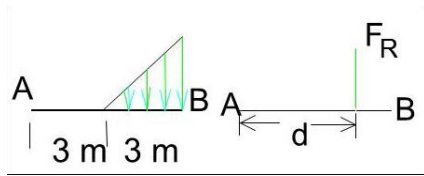
$$dF = w(x) dx$$
- Replace distributed load by F_R at x_R .



Example 1. Determine the single force F_R and its x location equivalent to the distributed loading shown below.

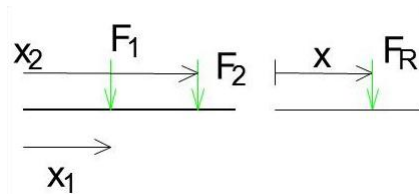


CONCEPT QUIZ



1. What is the location of F_R , i.e., the distance d ?

- A) 2 m B) 3 m C) 4 m
D) 5 m E) 6 m

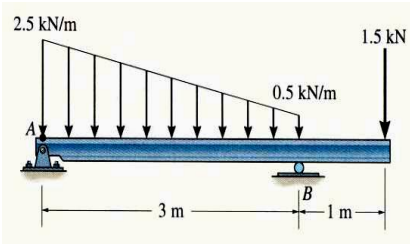


2. If $F_1 = 1$ N, $x_1 = 1$ m, $F_2 = 2$ N and $x_2 = 2$ m, what is the location of F_R , i.e., the distance x .

- A) 1 m B) 1.33 m C) 1.5 m
D) 1.67 m E) 2 m



Example 2



Given: The loading on the beam as shown.

Find: The equivalent force and its location from point A.