Write the first singularity equation $w = w(x)$ for the following beam in bending. You do not need to solve for the deflection. However, you need to determine the value of $R_A$ and $R_B$.

Momentum – Clockwise consider +ve

$W = w(x) = -12 \text{kN.m} (x-0)^2 + R_B (x-2)^1 + (-10)(-1) (x-2)^1 + 10(x-4)^1 - 5(x-5)^1 + R_D (x-6)^1$

Integrate once to get $V$

Integrate twice to get $M$

Take $x$ slightly more than 6 and find the reactions.