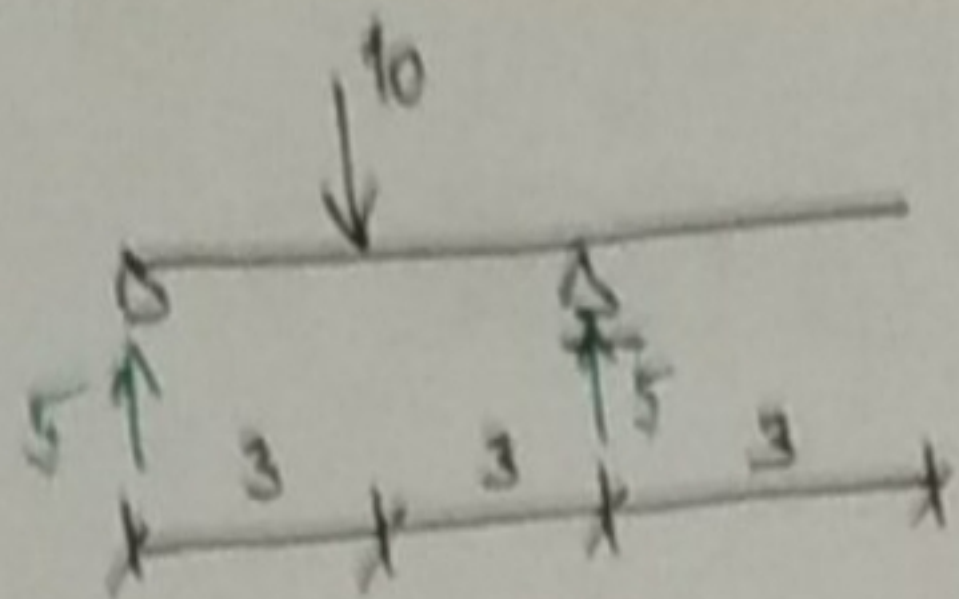




$$M(x) = 5 \cdot x \Big|_{x>3} - 10 \cdot (x-3) \Big|_{x>6} + 5 \cdot (x-6)$$

$$EI w'' = -M(x)$$

$$EI w'' = -5x \Big|_{x>3} + 10(x-3) \Big|_{x>6} - 5(x-6)$$

$$EI w' = C_1 - 5 \frac{x^2}{2} \Big|_{x>3} + 10 \frac{(x-3)^2}{2} \Big|_{x>6} - 5 \frac{(x-6)^2}{2}$$

$$EI w = C_2 + C_1 x - 5 \frac{x^3}{6} \Big|_{x>3} + 10 \frac{(x-3)^3}{6} \Big|_{x>6} - 5 \frac{(x-6)^3}{6}$$

$$w(x=0) = 0 \Rightarrow C_2 = 0$$

$$w(x=6) = 0 \Rightarrow 6C_1 - 5 \cdot \frac{6^3}{6} + 10 \cdot \frac{(6-3)^3}{6} = 0$$

$$C_1 = 22,5$$

$$w = \frac{1}{EI} \left[22,5x - 5 \frac{x^3}{6} \Big|_{x>3} + 10 \frac{(x-3)^3}{6} \Big|_{x>6} - 5 \frac{(x-6)^3}{6} \right]$$

$$w(x=3) = \frac{45}{EI}$$

$$w(x=9) = -\frac{67,5}{EI}$$

21. A.V.A.

$$M(x) = 5 \cdot (x-3) \Big|_{x>3} - 10(x-6) \Big|_{x>6}$$

$$EI w'' = -5(x-3) \Big|_{x>3} + 10(x-6) \Big|_{x>6}$$

$$EI w' = C_1 - 5 \frac{(x-3)^2}{2} \Big|_{x>3} + 10 \frac{(x-6)^2}{2}$$

$$EI w = C_2 + C_1 x - 5 \frac{(x-3)^3}{6} \Big|_{x>3} + 10 \frac{(x-6)^3}{6}$$

$$w(x=3) = 0 \quad C_2 + C_1 \cdot 3 = 0$$

$$C_2 = -3C_1$$

$$C_2 = -67,5$$

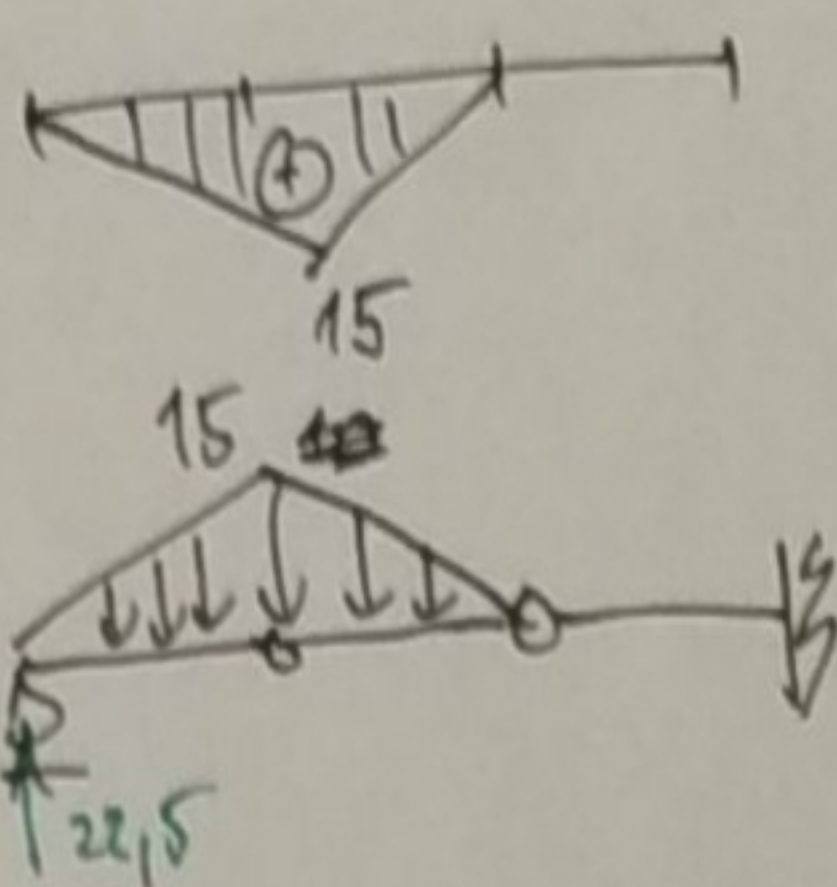
$$w(x=9) = 0$$

$$-3C_1 + 9C_1 - 5 \frac{6^3}{6} + 10 \frac{3^3}{6} = 0$$

$$C_1 = 22,5$$

$$wEI = -67,5 + 22,5x \dots$$

$$w(x=0) = \frac{-67,5}{EI}$$



$$w_1 = \frac{M_1}{EI} = \frac{22,5 \cdot 3 - \frac{1}{2} \cdot 15 \cdot 3 \cdot \frac{1}{3} \cdot 3}{EI} = \frac{45}{EI}$$

$$w_2 = \frac{M_2}{EI} = \frac{22,5 \cdot 9 - \frac{1}{2} \cdot 15 \cdot 3 \cdot \left(\frac{1}{3} \cdot 3 + 6\right) - \frac{1}{2} \cdot 15 \cdot 3 \cdot \left(\frac{2}{3} \cdot 3 + 3\right)}{EI} = -\frac{67,5}{EI}$$