

Name: _____

Section: _____

AEM 2011 Quiz #11

Tuesday, April 11, 2023

A non-communicating calculator is allowed. Full credit will only be given if all steps used are clearly communicated (free body diagrams, algebra, etc).

Last weekend was not warm but Professor Seiler was determined to go for a swim. The diving board at his local pool is shown below (left figure). The board is pinned at A and supported by a rolling joint at B, as shown in the simplified diagram (right figure). Assume:

- The board is rigid and has a total length of 4.3 m.
- He stands on the last 0.3 m of the board and his weight is distributed as $w(x) = 25000 \text{ N/m}$.
- The reaction forces at A and B are $A = -8062.5 \text{ Nj}$ and $B = 15562.5 \text{ Nj}$.

Sketch the shear force $V(x)$ and bending moment $M(x)$ diagram for the diving board (i.e. along x).

