

ME 395 HW2 computer 1 a)

$$A = \int_0^y H(y) dy \quad \text{and} \quad H(y) = -0.1(y-5)^2 + 3, \quad y \in [0, 10]$$

$$A = \int_0^{10} (-0.1(y-5)^2 + 3) dy = \left[-\frac{0.1}{3}(y-5)^3 + 3y \right]_0^{10}$$

$$= -\frac{0.1}{3} \cdot 5^3 + 30 + \frac{0.1}{3}(-5)^3 = 21.6 \text{ [m}^2\text{]}$$