ALM-1

1. There are 2750 men, women and children altogether at the swimming pool. There are twice as many women as men and four times as many children as women. How many men, women and children are at the swimming pool?

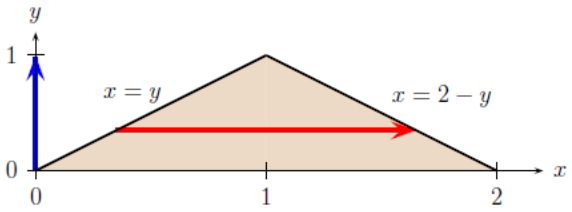
2. The tensions, T_1, T_2 *and* T_3 in a simple framework are given by the equations $T_1 + 2T_2 + 4T_3 = 3$, $T_1 + 2T_2 + 5T_3 = 7$, $2T_1 + T_3 = 4$. Determine T_1, T_2 *and* T_3 using Gaussian elimination.

ALM-2

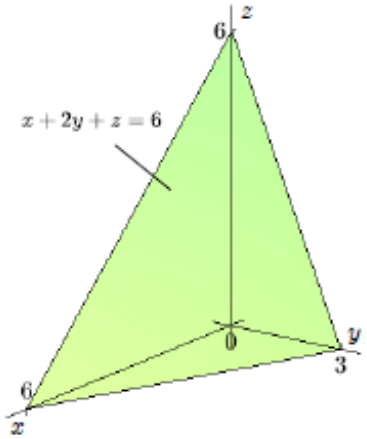
1. A rectangular box open at the top is to have a volume of 64 cubic ft. Find the dimensions of the box requiring least material for its construction.
2. Determine charge q and current *i* in the LRC circuit with inductance 1H, resistance 12 ohms, capacitance (1/35)F, E(t) =2sin3t.

ALM-3

1. Using the figure, find the area.



2. Using the image, obtain volume.



ALM-4

1	If $\bar{F} = 3xy\hat{i} - y^2\hat{j}$ evaluate $\int_C \bar{F} \cdot d\bar{r}$ where C is the curve $y = 2x$ from $(0,0)$ to $(1,2)$.
2	Evaluate by Green's theorem $\oint_C \sin y\,dx + x(1+\cos y)\,dy$ where C is the circle $x^2 + y^2 = a^2$.