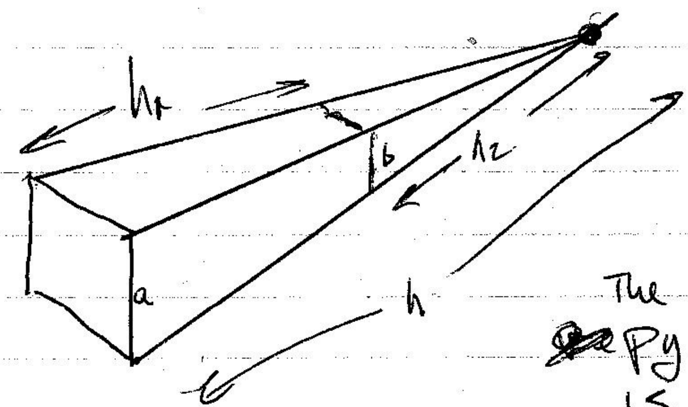


The volumn of a 4 sided pyramid with a square base is $V = \frac{1}{3}a^2 h$

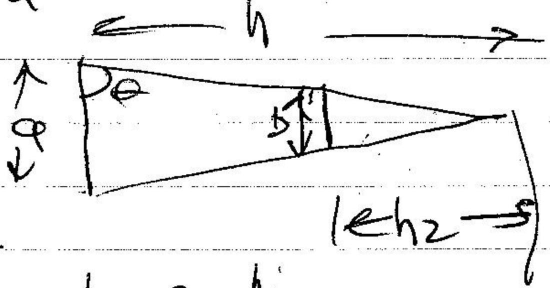
For our problem we want to find h_1 when $a = 5/8$; $b = 3/8$ and the volumn of the original bar is $7 \times 5/8 \times \frac{5}{8}$ or $7a^2$

The volumn of the truncated pyramid is the volumn of the whole pyramid − volumn of the top pyramid

$$V = \frac{1}{3}a^2 h - \frac{1}{3}b^2 h_2 \quad \text{and} \quad h = h_1 + h_2$$

$$\boxed{\text{Eq I} \quad \text{So: } V = \frac{1}{3}a^2(h_1 + h_2) - \frac{1}{3}b^2 h_2}$$

Now if we look at one side of the pyramid



$$\tan\theta = \frac{h}{\frac{a}{2}} \qquad \tan\theta = \frac{h_2}{\frac{b}{2}}$$

So

$$\frac{h}{\frac{a}{2}} = \frac{h_2}{\frac{b}{2}}$$

Or

$$\frac{h}{a} = \frac{h_2}{b} \quad \text{and } h = h_1 + h_2$$

$$\frac{h_1 + h_2}{a} = \frac{h_2}{b}$$

$$b h_1 + b h_2 = a h_2$$

$$b h_1 = h_2 (a - b)$$

$$\boxed{\text{Eq II} \quad h_2 = \frac{b}{(a-b)} h_1}$$

Repeating EQ I

$$V = \frac{1}{3}a^2(h_1 + h_2) - \frac{1}{3}b^2 h_2$$

Replace h_2 using EQ. II

$$V = \frac{a^2}{3}\left(1 + \frac{b}{a-b}\right)h_1 - \frac{b^2}{3}\left(\frac{b}{a-b}\right)h_1$$

$$V = h_1\left[\frac{a^2}{3}\left(1 + \frac{b}{a-b}\right) - \frac{b^3}{3(a-b)}\right]$$

$$h_1 = \frac{3V}{a^2\left(1 + \frac{b}{(a-b)}\right) - \frac{b^3}{(a-b)}} \quad \text{and} \quad V = La^2$$

Plug in the Dimensions

$$\boxed{h_1 = 10.71''}$$

$$h_1 = \frac{3La^2}{a^2\left(1+\frac{b}{a-b}\right) - \frac{b^3}{a-b}}$$

$$h_1 = \frac{3L}{\left(1+\frac{b}{a-b}\right) - \frac{b^3}{a^2(a-b)}}$$

$L = 7$
$a = 5/8$
$b = 3/8$

$$h_1 = \frac{21}{\left(1+\frac{3/8}{(5/8 - 3/8)}\right) - \frac{(3/8)^3}{(5/8)^2(5/8 - 3/8)}}$$

$$h_1 = \frac{3L}{\left(1+\frac{3}{2}\right) - \frac{3^3}{5^2(2)}} = \frac{3L}{2.5 - \frac{27}{50}}$$

$$h_1 = \frac{21}{1.96} = 10.71$$