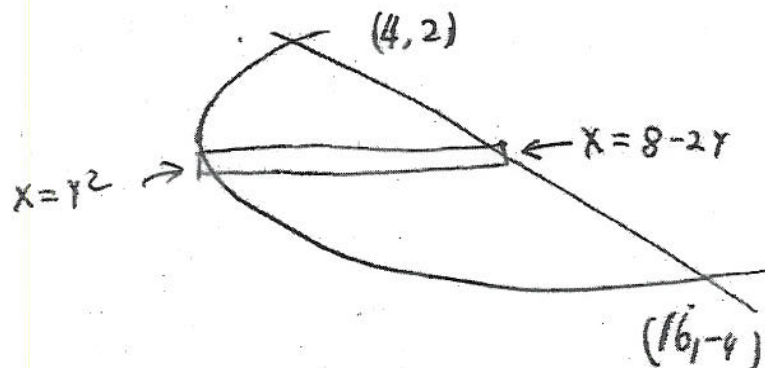
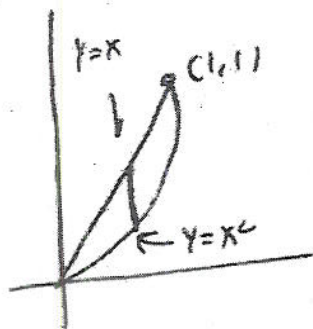


Exam 2 Math 142 Fall 2006
 Pictures for the solutions.

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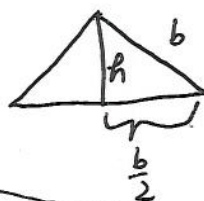


9



The base of our solid,

Each slice is an equilateral triangle with thickness $t = dx$ of vol $\frac{1}{2} b h t$

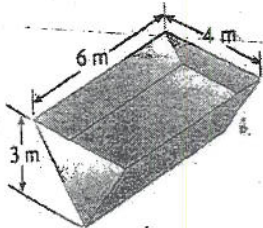


$$\frac{h}{b} = \cos 60^\circ$$

$$h = \frac{\sqrt{3}}{2} b$$

10

Tank



My axis



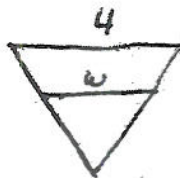
Each layer of water looks like



$$t = dy$$

$$l = 6$$

Use similar triangles to find w



$$\left. \begin{array}{l} 4 \\ w \end{array} \right\} 3 \left. \begin{array}{l} 3 \\ 3-y \end{array} \right\}$$

$$\frac{w}{3-y} = \frac{4}{3} \quad w = \frac{4}{3}(3-y)$$