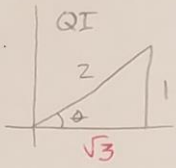
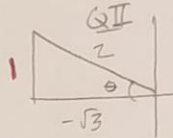


HW 44

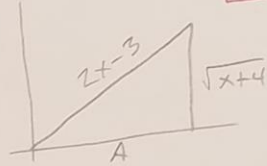
① $\cos(\sin^{-1}(\frac{1}{2})) = \frac{\sqrt{3}}{2}$



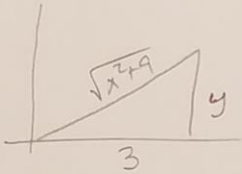
② $\csc(\cos^{-1}(-\frac{\sqrt{3}}{2})) = -2$



③ $\tan(\csc^{-1}(\frac{2x-3}{\sqrt{x+4}})) = \frac{\sqrt{x+4}}{\sqrt{4x^2-13x+5}}$



④ $\cot(\cos^{-1}(\frac{3}{\sqrt{x^2+9}})) = \frac{3}{x}$



$3^2 + y^2 = x^2 + 9$
 $y = x$

⑤ \sin, \csc, \tan, \cot

⑥ \sin, \cos

$A^2 + x + 4 = (2x-3)^2$
 $A^2 + x + 4 = 4x^2 - 12x + 9$
 $A^2 = 4x^2 - 13x + 5$
 $A = \sqrt{4x^2 - 13x + 5}$

⑦



Total Ice = $\frac{\pi}{3}(2)^2 \cdot 4 + \frac{1}{2} \cdot \frac{4}{3} \pi (2)^3$
 $= \frac{16\pi}{3} + \frac{32\pi}{6}$
 $= \frac{64\pi}{6}$
 $= \frac{32\pi}{3} \text{ inch}^3$

Volume melted = $.4(\frac{32\pi}{3}) = \frac{4}{10} \cdot \frac{32\pi}{3} = \frac{64\pi}{15} \text{ inch}^3$

* $\frac{r}{h} = \frac{2}{4}$

$4r = 2h$

$r = \frac{h}{2}$

$\frac{\pi}{3}(r^2)h = \frac{64\pi}{15}$

$\frac{\pi}{3}(\frac{h}{2})^2 \cdot h = \frac{64\pi}{15}$

$\frac{\pi}{12} h^3 = \frac{64\pi}{15}$

$\frac{1}{12} h^3 = \frac{64}{15}$

$h^3 = \frac{64 \cdot 12}{15}$

$h = \sqrt[3]{\frac{64 \cdot 12}{15}} = 4 \sqrt[3]{\frac{4}{5}} = 3.7132 \text{ in}$

$h = 3.7 \text{ inches}$