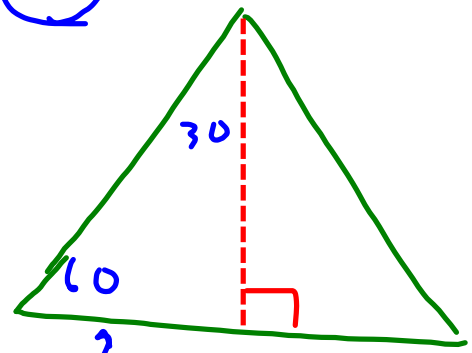
THUR 4-06-06

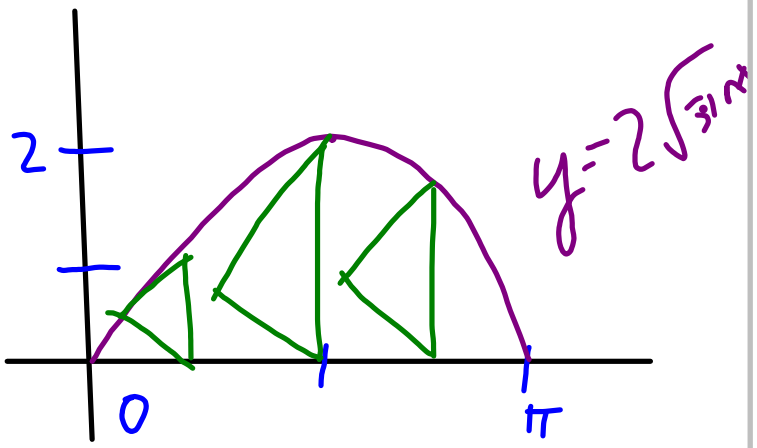
P. 390-1

(1) a) $\frac{4\pi}{3}$ b) $\frac{16}{3}$ c) $\frac{8}{3}$ d) $\frac{4\sqrt{3}}{3}$

(10) $\frac{8}{3}$

7





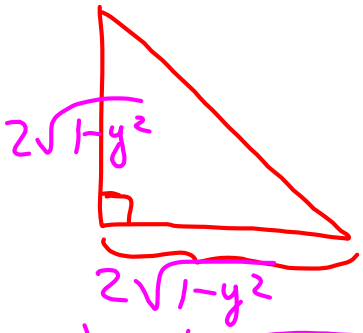
$$h = \sqrt{3} \cdot \sqrt{\sin x} = \sqrt{3 \sin x}$$

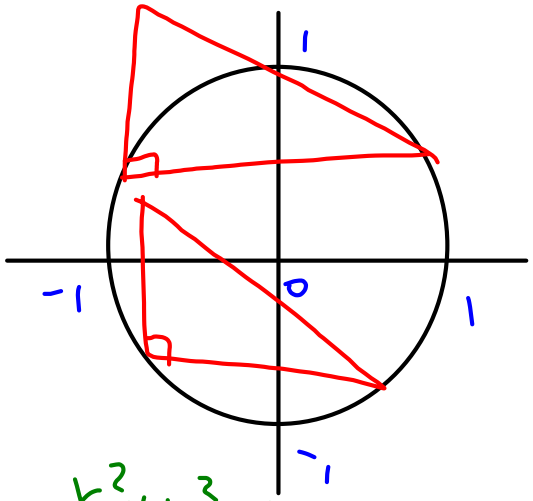
$$A_0 = \frac{1}{2}\left(2\sqrt{\sin x}\right)\left(\sqrt{3\sin x}\right) = \sqrt{3} \cdot \sin x$$

$$V = \int_0^{\pi} \sqrt{3} \cdot \sin x \cdot dx$$

$$\vdots$$

(10)





$x = \pm\sqrt{1-y^2}$

$x^2 + y^2 = 1$

$y^2 = 1 - x^2$

$y = \pm\sqrt{1-x^2}$

$A_b = \frac{1}{2}\left(2\sqrt{1-y^2}\right)\left(2\sqrt{1-y^2}\right)$

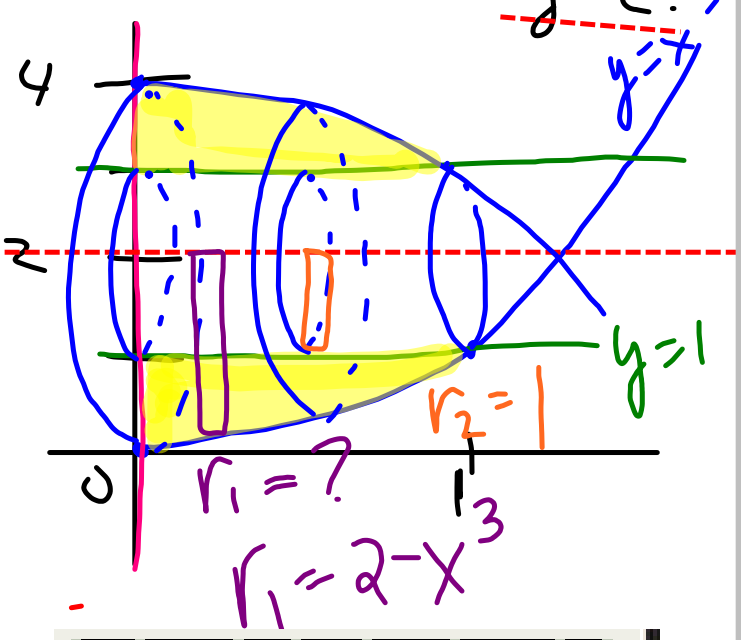
$A_b = 2(1-y^2)$

$$V = 2\int_{y=0}^{y=1}(2-2y^2)\,dy$$

$$\vdots$$

$$\frac{8}{3}\ \text{CU. UNITS}$$

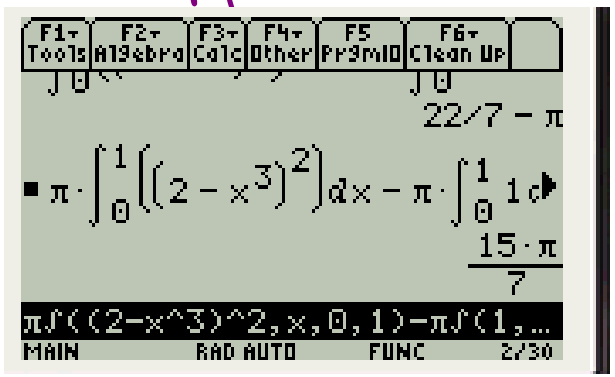
Ex.1) FIND THE VOLUME OF THE SOLID GENERATED IF THE REGION BOUNDED BY THE GRAPH OF $y = x^3$ AND THE LINES $x = 0$ AND $y = 1$ IS REVOLVED ABOUT $y = 2$.



$$V = V_{out} - V_{in}$$

$$= \pi \int_{x=0}^{x=1} (2-x^3)^2 \, dx - \pi \int_{x=0}^{x=1} (1)^2 \, dx$$

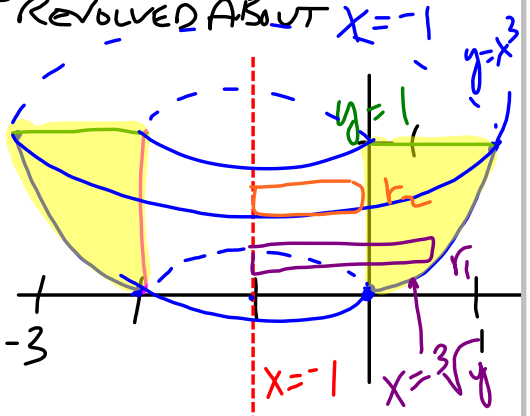
$$= \frac{15\pi}{7} \text{ CU. UNITS}$$



Ex 7 FIND THE VOLUME OF THE SOLID GENERATED IF THE REGION BOUNDED BY THE GRAPH OF $y = x^3$ AND THE LINES $x = 0$ AND $y = 1$ IS REVOLVED ABOUT $x = -1$

$V = V_{OUT} - V_{IN}$

$V = \pi \int_{y=0}^{y=1} \left(\sqrt[3]{y} + 1\right)^2 dy$



$- \pi \int_{y=0}^{y=1} (1)^2 \, dy$

$r_1 = \sqrt[3]{y} - -1$

$r_1 = \sqrt[3]{y} + 1$

$r_2 = 1$

$\int_0^1 \left((y^{1/3} + 1)^2\right) dy - \pi \cdot \int_0^1 \ldots$

$\frac{21 \cdot \pi}{10}$

$)^2, y, 0, 1) - \pi \int (1, y, 0, 1)$

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$V = \frac{21\pi}{10}$ CU. UNITS

7.3 "OTHER" GIFT

2b, 3, 5, 7