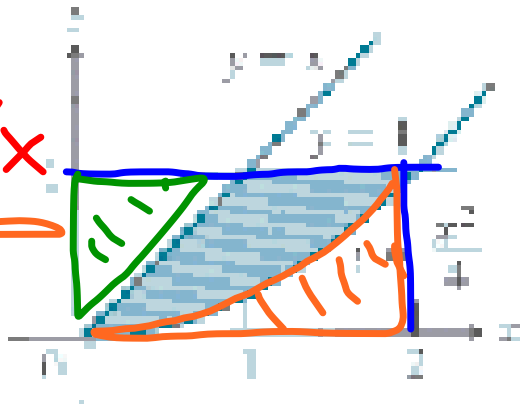
WED 3-29-06 P. 381 (7)

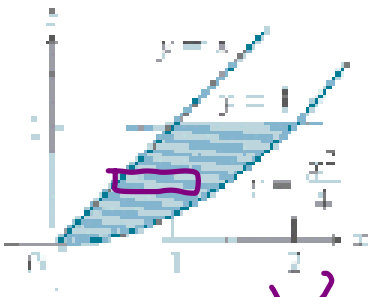
SET UP HOW TO CALCULATE THE AREA IN AS MANY WAYS AS POSSIBLE.

$$\int_{x=0}^{x=2} 1\,dx - \frac{1}{2}(1)(1) - \int_{x=0}^{x=2} \frac{x^2}{4}\,dx$$



$$\text{AREA} = 2$$

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

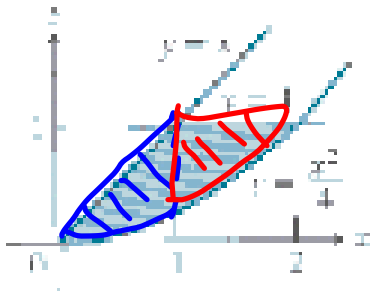


$$y = \frac{x^2}{4}$$

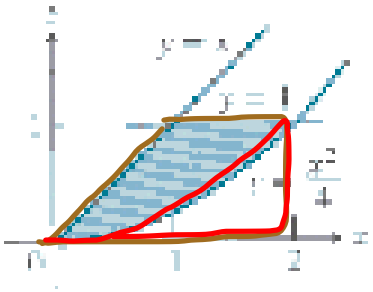
$$4y = x^2$$

$$\sqrt{4y} = x = 2\sqrt{y}$$

$$\int_{x=0}^{x=1} \left(x - \frac{x^2}{4}\right)dx + \int_{x=1}^{x=2} \left(1 - \frac{x^3}{4}\right)dx$$



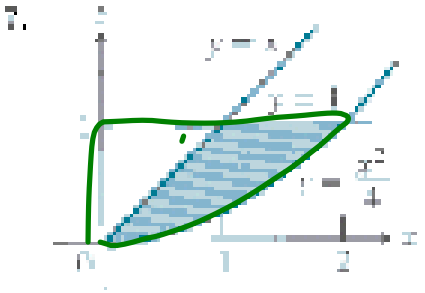
$$A_{TRAP} - \int_0^2 \frac{x^2}{4}\,dx$$



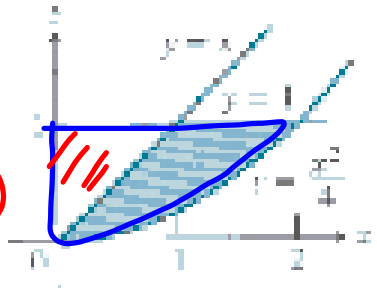
$$\frac{1}{2}(1)(1+2) - \int_0^2 \frac{x^2}{4}\,dx$$

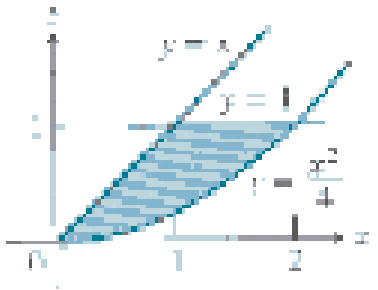
$$\int_{y=0}^{y=1} 2\sqrt{y}\,dy - \int_{y=0}^{y=1} y\,dy$$

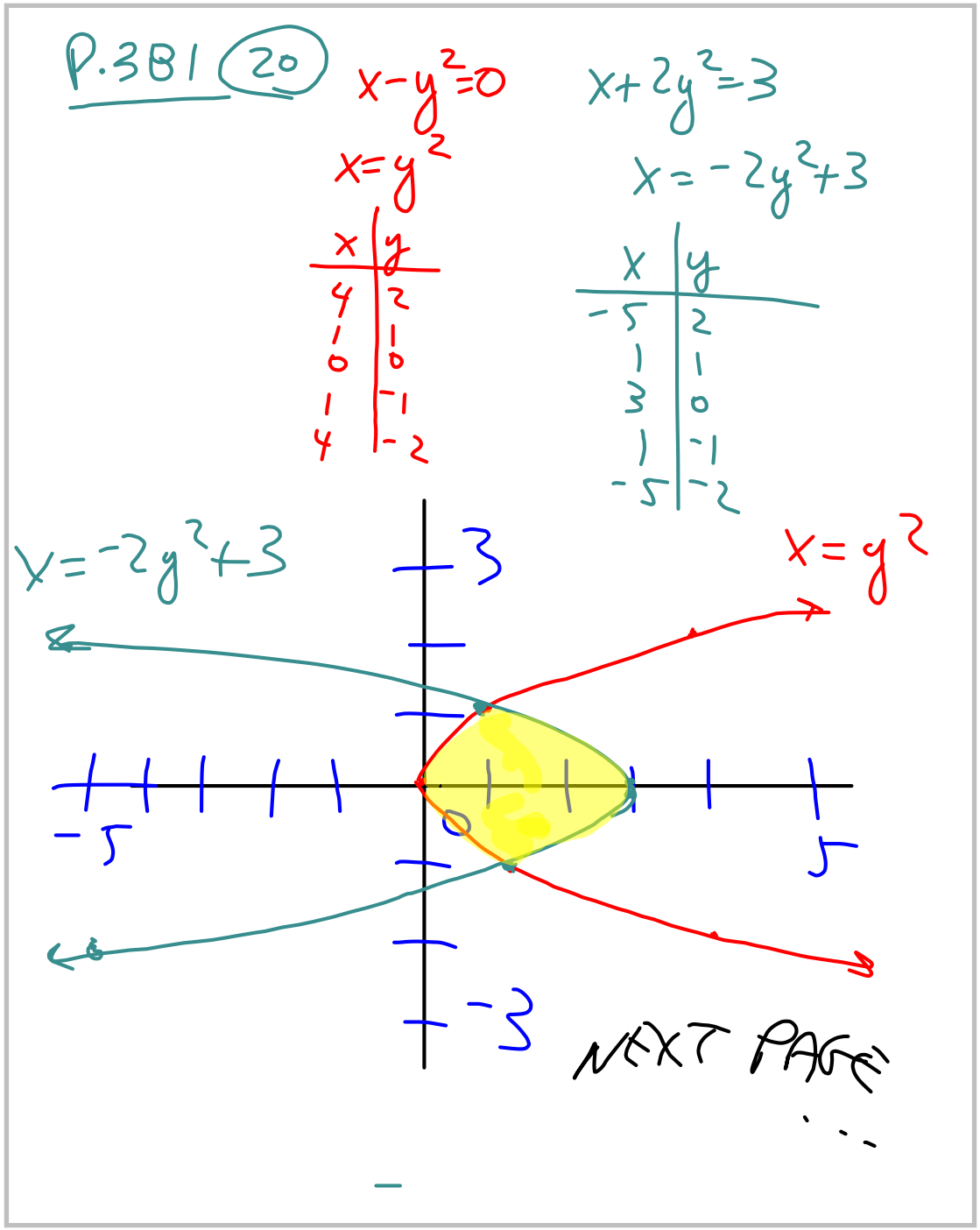
$$\frac{1}{2}(1)(1)$$



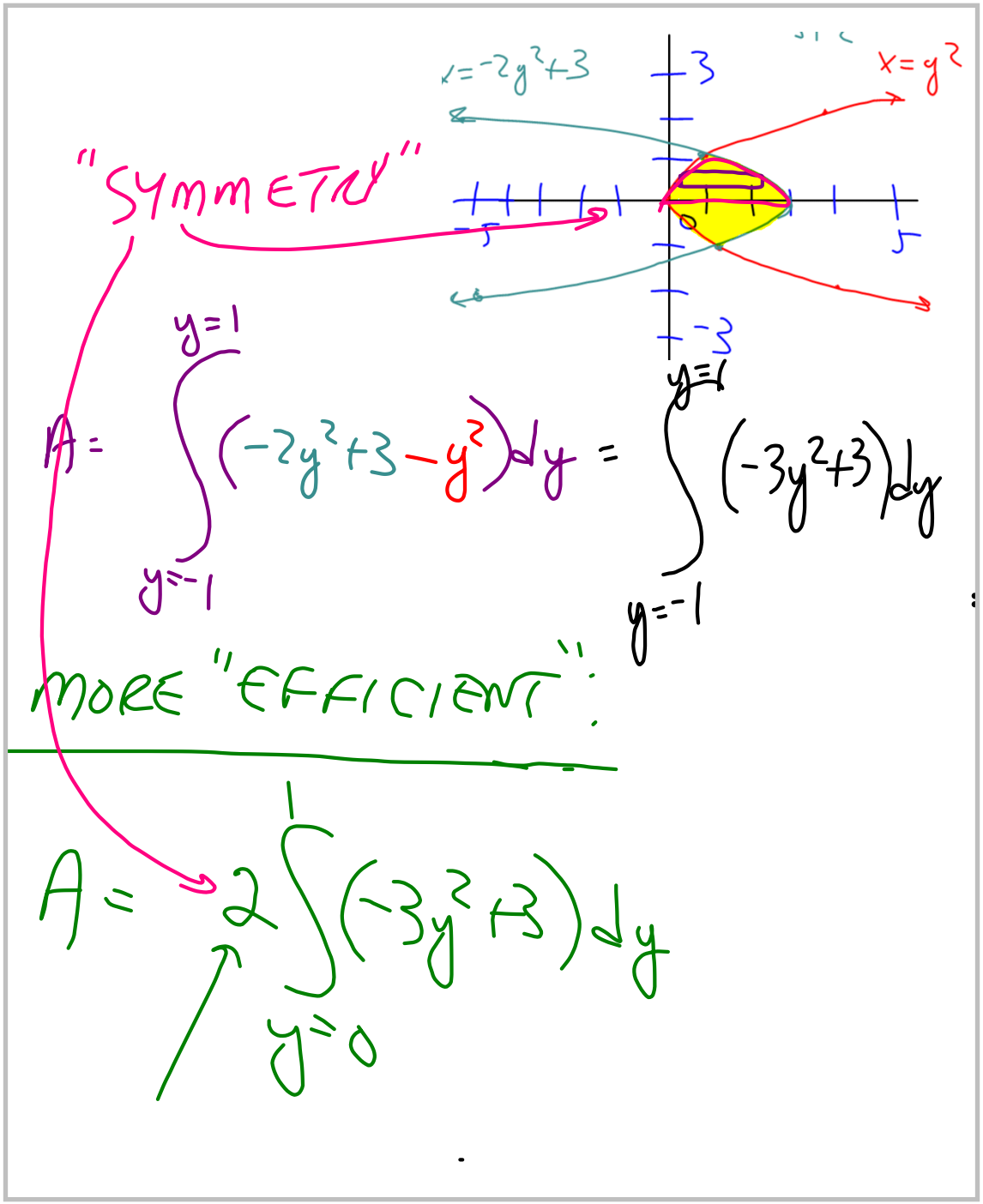
$$\int_0^2 \left(1 - \frac{x^2}{4}\right) dx - \frac{1}{2}(1)(1)$$







Title: Mar 29 - 10:17 AM (5 of 12)


"SYMMETRY"
$x=-2y^2+3$
$x=y^2$
3
-3
-1
1
$A=\int_{y=-1}^{y=1}(-2y^2+3-y^2)\,dy=\int_{y=-1}^{y=1}(-3y^2+3)\,dy$
MORE "EFFICIENT":
$A=2\int_{y=0}^{1}(-3y^2+3)\,dy$

P. 380 - 1

(4) $\frac{4}{3}$ (8) $\frac{5}{6}$ (18) $\frac{9}{2}$

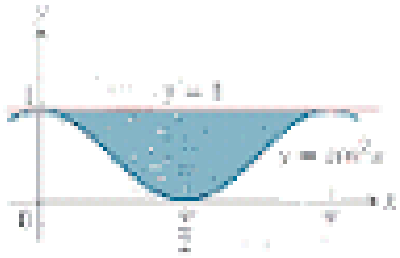
AP BUFF

(19) D (20) D

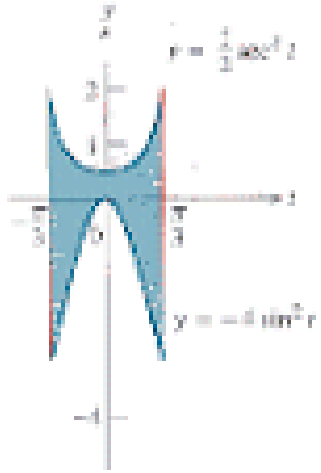
Section 7.2 Exercises

In Exercises 1–8, find the area of the shaded region analytically.

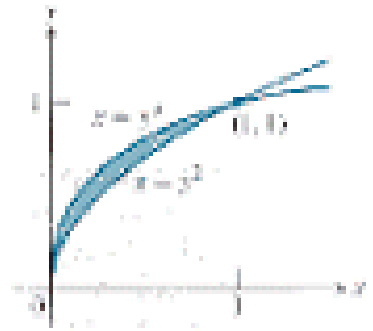
1.



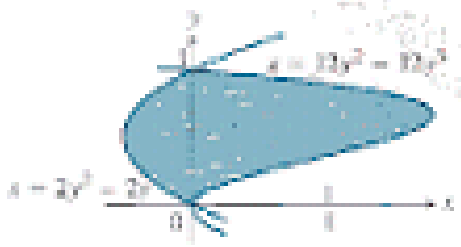
2.



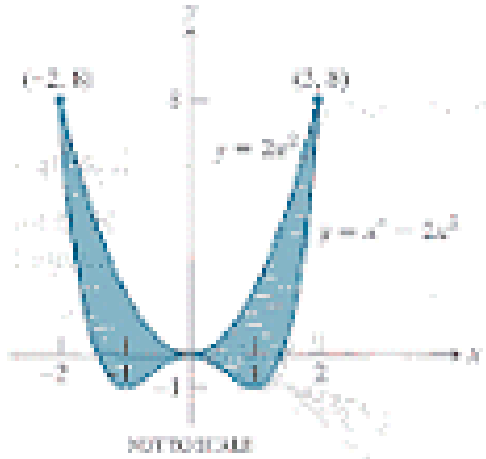
3.



4.

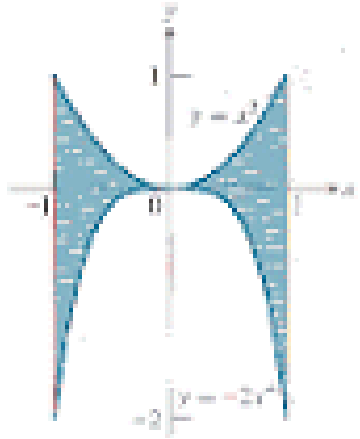


5.

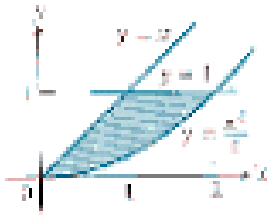


NOT TO SCALE

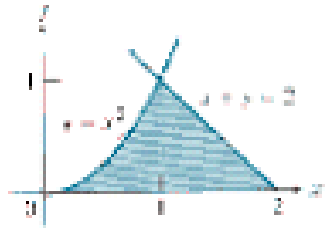
6.



7.

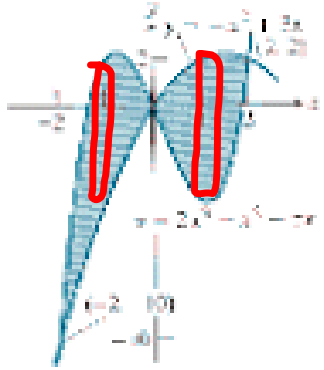


8.

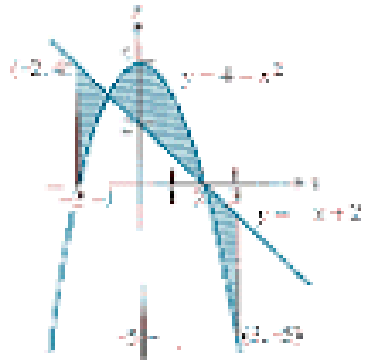


In Exercises 9 and 10, find the total shaded area.

9.



10.



O.T.C.

- CORRECT / FINISH LAST 2 DAYS' O.T.C.
- P. 381 9, 10 DO INTEGRATION W/ TI-89
- AP BUFF 21-23
- TEST FRI: 7.1, 7.2

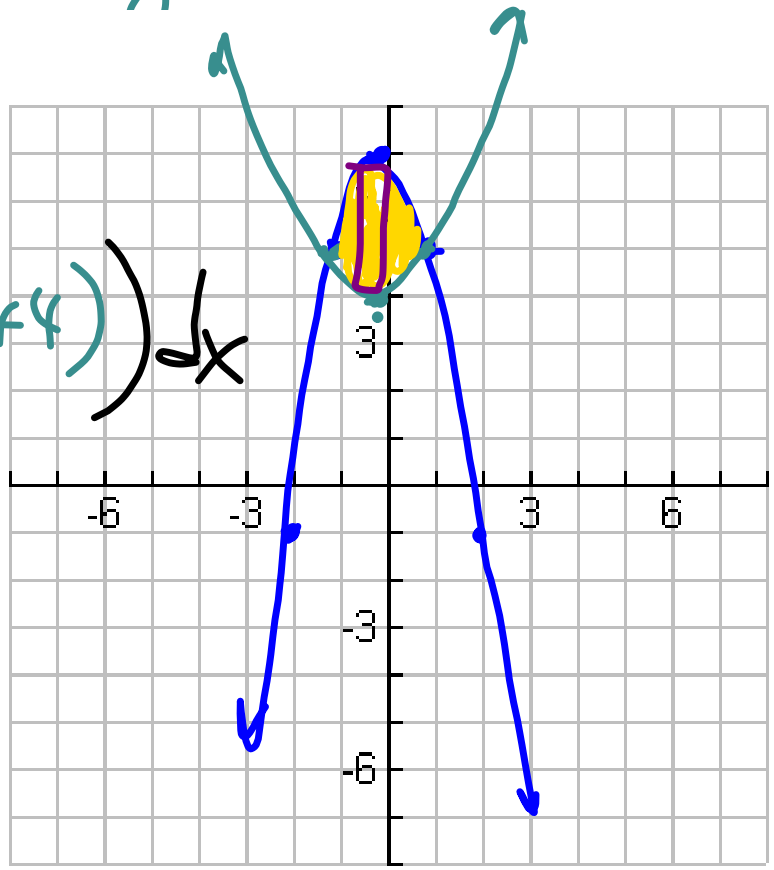
P. 381

(13) $y = 7 - 2x^2$

$y = x^2 + 4$

$$A = 2 \cdot \int_{x=0}^{x=1} \left(7 - 2x^2 - (x^2 + 4)\right) dx$$

$$= 2 \int_0^2 (3 - 3x^2)\, dx$$



(14) $y = x^4 - 4x^2 + 4$

$y = (x^2 - 2)^2$

x	y
2	4
1	1
0	4
-1	1
-2	4
$\sqrt{2}$	0
$-\sqrt{2}$	0