

## 7.2 In-Class Quiz Review

1. Write down formulas:

a) Disc Method \_\_\_\_\_

b) Washer Method \_\_\_\_\_

c) Volume of Known Cross Sections:  $V = \int [\text{Area of Cross Section}] dx$

Area Formulas:

1. Square \_\_\_\_\_

2. Isosceles right triangle (leg on base) \_\_\_\_\_

3. Isosceles right triangle (hypotenuse on base) \_\_\_\_\_

4. Equilateral triangle \_\_\_\_\_

5. Semicircle \_\_\_\_\_

2. Given the region bounded by  $y = 6 - x$ ,  $x = 1$ , and  $y = -2$ , find the volume of the solid generated by revolving the region about the given line below

a. Rotated about  $y = -2$

b. Rotated about the line  $x = 8$

## 7.2 In-Class Quiz Review

Write down formulas:

a) Disc Method  $V = \pi \int_{x_1}^{x_2} R(x)^2 dx$  or  $\pi \int_{y_1}^{y_2} R(y)^2 dy$

b) Washer Method  $V = \pi \int_{x_1}^{x_2} R(x)^2 - r(x)^2 dx$  or  $\pi \int_{y_1}^{y_2} R(y)^2 - r(y)^2 dy$

c) Volume of Known Cross Sections:  $V = \int [\text{Area of Cross Section}] dx$

Area Formulas:

1. Square  $A = (\text{base})^2$

2. Isosceles right triangle (leg on base)  $A = \frac{1}{2}(\text{base})^2$

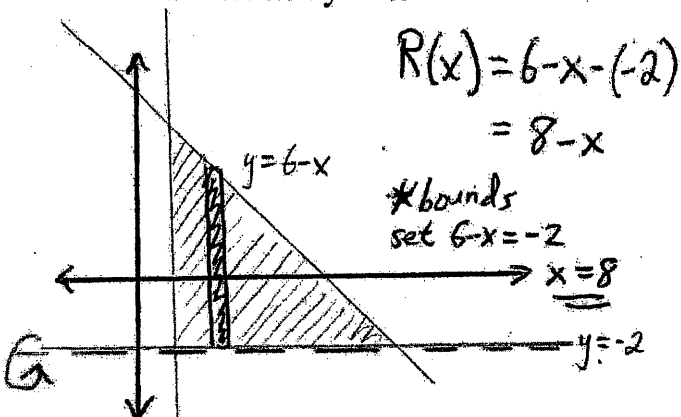
3. Isosceles right triangle (hypotenuse on base)  $A = \frac{1}{4}(\text{hypotenuse})^2 = \frac{1}{4}(\text{base})^2$

4. Equilateral triangle  $A = \frac{\sqrt{3}}{4}(\text{base})^2$

5. Semicircle  $A = \frac{\pi}{8}(\text{diameter})^2 = \frac{\pi}{8}(\text{base})^2$

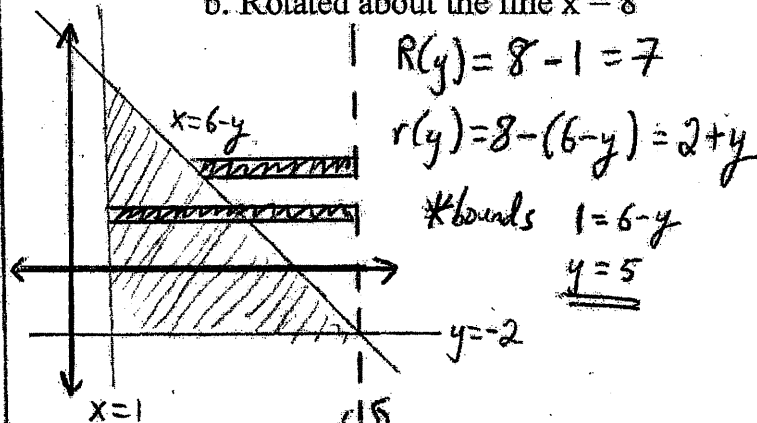
2. Given the region bounded by  $y = 6 - x$ ,  $x = 1$ , and  $y = -2$ , find the volume of the solid generated by revolving the region about the given line below

a. Rotated about  $y = -2$  Disc, Top/bottom



$$V = \pi \int_1^8 [8 - x]^2 dx = \frac{343}{3} \pi \text{ units}^3$$

b. Rotated about the line  $x = 8$



$$V = \pi \int_2^5 7^2 - (2 + y)^2 dy = \frac{686}{3} \pi \text{ units}^3$$