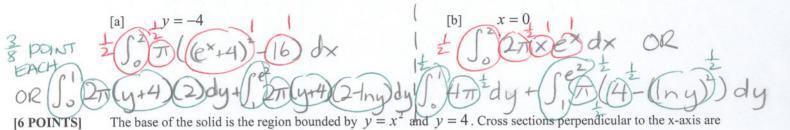
THIS IS A NO CALCULATOR QUIZ

Write, BUT DO NOT COMPUTE, integrals for the volumes of the following solids.

You may use any method you wish.

[6 POINTS]

The region bounded by $y = e^x$, x = 2, y = 0 and x = 0 is revolved about the line



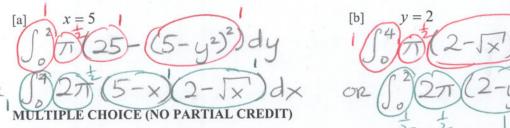
[a] semicircles $(4-x^2)^2 c \times$

[b] equilateral triangles $\int_{-2}^{2} \sqrt{\frac{3}{4}} (4-x^{2})^{2} dx$ POINT EACH

[6 POINTS]

[2 POINTS]

The region bounded by $y = \sqrt{x}$, y = 2 and x = 0 is revolved about the line



An MRI scan indicates that cross sectional areas of adjacent slices of a tumor are as given in the table below. Estimate the volume of the tumor.

х	0.0	0.2	0.4	0.6	0.8	1.0	1.2
A(x)	0.0	0.3	0.4	0.2	0.3	0.1	0.0

- [A] 1.2(0.0+0.3+0.4+0.2+0.3+0.1+0.0)
 - $0.2\pi (0.0^2 + 0.3^2 + 0.4^2 + 0.2^2 + 0.3^2 + 0.1^2 + 0.0^2)$

LETTER OF

CORRECT ANSWER:

[C]
$$\frac{0.2}{3} (0.0 + 2 \times 0.3 + 4 \times 0.4 + 2 \times 0.2 + 4 \times 0.3 + 2 \times 0.1 + 0.0)$$

[D]
$$\frac{0.2}{2} (0.0 + 2 \times 0.3 + 2 \times 0.4 + 2 \times 0.2 + 2 \times 0.3 + 2 \times 0.1 + 0.0)$$

[2 BONUS POINTS]

[B]

Sketch a region and an axis of revolution so the volume of the solid created is given by the integral $\int_{0}^{1} \pi (4 - e^{x}) dx$.