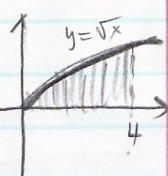


Sec 14.2 #10.

$$\int_0^4 \int_{\frac{y}{2}}^{\sqrt{y}} x^2 y^2 dx dy = \int_0^4 \left[y^2 \cdot \frac{x^3}{3} \right]_{x=\frac{y}{2}}^{\sqrt{y}} dy$$

$$= \int_0^4 \left(\frac{y^{7/2}}{3} - \frac{y^5}{24} \right) dy = \left[\frac{2y^{9/2}}{27} - \frac{y^6}{144} \right]_0^4 = \frac{1024}{27} - \frac{256}{9} = \frac{256}{27}$$

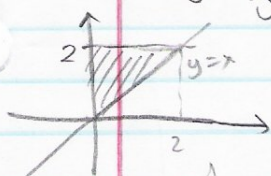
#18.



$$\int_0^2 \int_{y^2}^4 \frac{y}{1+x^2} dx dy = \int_0^4 \int_0^{\sqrt{x}} \frac{y}{1+x^2} dy dx = \frac{1}{2} \int_0^4 \frac{x}{1+x^2} dx$$

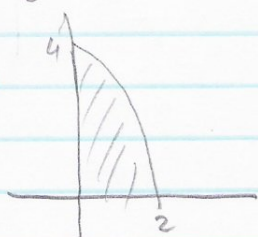
$$= \left[\frac{1}{4} \ln(1+x^2) \right]_0^4 = \frac{1}{4} \ln(17)$$

#28.



$$\int_0^2 \int_0^y (4-y^2) dx dy = \int_0^2 (4y - y^3) dy = \left[2y^2 - \frac{y^4}{4} \right]_0^2 = 4$$

#38.

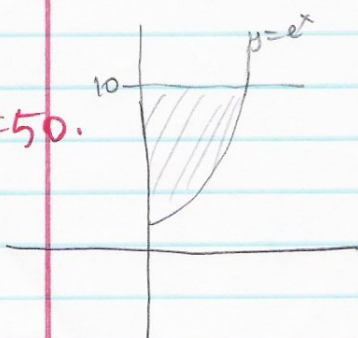


$$\int_0^2 \int_0^{4-x^2} (4-x^2) dy dx = \int_0^2 (4-x^2)(4-x^2) dx$$

$$= \int_0^2 (16 - 8x^2 + x^4) dx = \left[16x - \frac{8x^3}{3} + \frac{x^5}{5} \right]_0^2$$

$$= 32 - \frac{64}{3} + \frac{32}{5} = \frac{256}{15}$$

#50.



$$\int_0^{\ln 10} \int_{e^x}^{10} \frac{1}{\ln y} dy dx = \int_1^{10} \left[\frac{y}{\ln y} \right]_0^{\ln y} dy$$

$$= \int_1^{10} 1 dy = y \Big|_1^{10} = 10 - 1 = 9$$