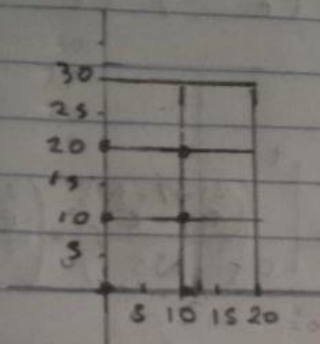


Ozel Vazquez Lopez

1.



$$4A = 100$$

$$f(0,0)(100) = 2 \times 100 = 200$$

$$f(0,10)(100) = 4 \times 100 = 400$$

$$f(0,20)(100) = 7 \times 100 = 700$$

$$f(10,0)(100) = 2 \times 100 = 200$$

$$f(10,10)(100) = 6 \times 100 = 600$$

$$f(10,20)(100) = 10 \times 100 = 1000$$

$$3100 \text{ u}^3$$

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2)

$$\int_0^1 \int_0^3 e^{x+3y} dx dy = e^{x+3y} \Big|_0^3 = (e^{3+3y}) - (e^{0+3y}) =$$

$$e^{3+3y} - e^{3y}$$

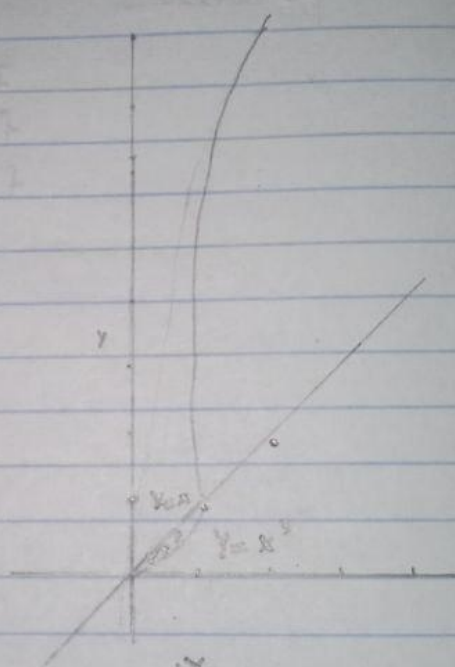
$$\int_0^1 \frac{e^{3+3y} - e^{3y}}{3} dy = \frac{e^{3+3y} - e^{3y}}{9} \Big|_0^1 = \left(\frac{e^{3+3 \cdot 1} - e^{3 \cdot 1}}{9} \right) - \left(\frac{e^{3+3 \cdot 0} - e^{3 \cdot 0}}{9} \right)$$

$$\frac{e^6 - 2e^3 + 1}{9} = //$$

3) $y=x, y=x^3, x \geq 0$

$$\iint_D (x^2 + 2y) dA$$

y	x	y	x
0	0	0	0
1	1	1	1
2	2	8	2



$$\int_0^1 \int_{x^3}^x (x^2 + 2y) dy dx = \left[xy + y^2 \right]_{x^3}^x = (x \cdot x + x^2) - (x \cdot x^3 + x^6)$$

$$= x^2 - x^4 + x^2 - x^6 = 2x^2 - x^4 - x^6$$

$$\int_0^1 (2x^2 - x^4 - x^6) dx = \left[\frac{2x^3}{3} - \frac{x^5}{5} - \frac{x^7}{7} \right]_0^1 = \left(\frac{2}{3} - \frac{1}{5} - \frac{1}{7} \right) - \left(0 - 0 - 0 \right) = \frac{23}{105}$$

$$\left(-\frac{1}{7} - \frac{1}{5} + \frac{1}{4} + \frac{1}{3} \right) - \left(-\frac{0}{7} - \frac{0}{5} + \frac{0}{4} + \frac{0}{3} \right) = \frac{23}{105}$$