2) $\int_0^1 \int_0^2 \int_0^1 (x^2 + y^2 + z^2)\, dx\, dy\, dz$

$\int_0^1 (x^2 + y^2 + z^2)\, dy = \left[x^2 y + z^2 y + \frac{y^3}{3} \right]_0^1$

$\int_0^1 \left[x^2 + z^2 + \frac{1^3}{3} \right] - [0] = \int_0^1 \int_0^2 \left(y^2 + z^2 + \frac{1}{3} \right) dy\, dz$

$\int_0^2 \left(y^2 + z^2 + \frac{1}{3} \right) dz = \left[\frac{2}{3} + 2z^2 + \frac{8}{3} \right]_0^2$

$\int_0^2 \left(\frac{2}{3} + 2z^2 + \frac{8}{3} \right) dz = \int \left[\frac{2}{3} + 2t^2 + \frac{8}{3} \right] = \frac{12}{3}$

4

3) $5x - 2$, no intervalo $-2 \leq x \leq 3$

$y' = 5 \int_{-2}^{3} \sqrt{1 + [5]^2}\, dx$

$y = \int_{-2}^{3} \sqrt{26}\, dx = \left[\sqrt{26}\, x \right]_{-2}^{2}$ **25,4950**

$[\sqrt{26} \cdot 3] - [\sqrt{26} \cdot (-2)] = 15,292 + 10,198 =$

$\frac{6}{3} \cdot \frac{1}{1}$ $\quad \frac{8 \cdot 24}{3}$

4) $g = f(x) = 4$
$g(x) = x^2$ $\quad 4 = x^2 \quad x^2 - 4 = 0$

$$\int_0^2 (x^2 - 4) \cdot dx$$

$$\left[\frac{x^3}{3} - 4x\right]_0^2 \rightarrow \left[\frac{2^3}{3} - 4 \cdot 2\right] - [0]$$

$$\left[\frac{8}{3} - \frac{8}{1}\right] - \frac{16}{3} = \boxed{5,33}$$

5) Dada a integral $\int_0^{2,5} x \cdot dx$

$$\left[\frac{x^2}{2}\right]_0^{2,5} = \left[\frac{(2,5)^2}{2}\right] - [0]$$

$$\left[\frac{6,25}{2}\right] = \boxed{3,125}$$

6) $y = x^2$ $[0,3]$

$y = x^2$ $x = \sqrt{y}$ $= x = y^{1/2}$

$V = \pi \int_0^3 [y^{1/2}]^2 \cdot dy$

$V = \pi \int_0^3 [y] \cdot dy$

$V = \pi \left[\frac{y^2}{2}\right]_0^3 \rightarrow V = \pi \left[\frac{3^2}{2}\right] \cdot [0]$

$V = \pi = \frac{9}{2} = \frac{9\pi}{2} = \boxed{14,13}$

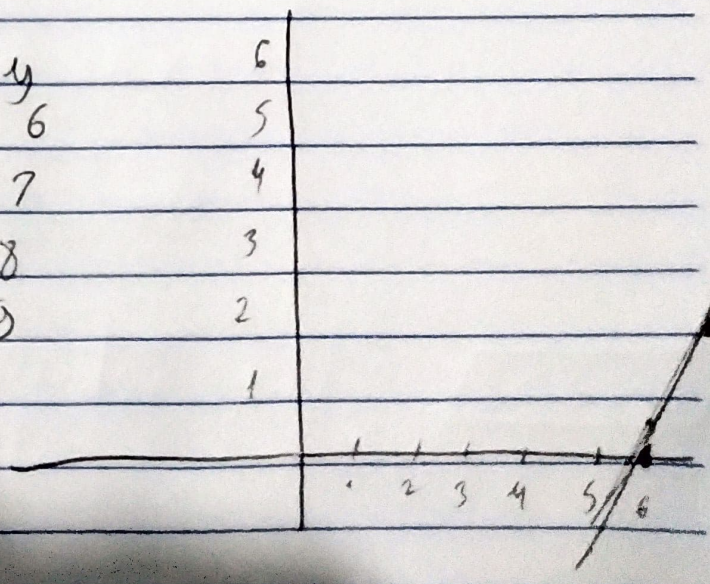
7) $Y = x + 6$, $y = x^2$ $[0,3]$

$x + 6 = x^2$

$x^2 - x - 6 = 0$

$x + 6$

x	y
0	6
1	7
2	8
3	9



$$\int_0^3 (x + 6 - x^2) \cdot dx =$$

$$\left[\frac{x^2}{2} + 6x - \frac{x^3}{3} \right]_0^3 = \left[\frac{3^2}{2} + 6 \cdot 3 - \frac{(3)^3}{3} \right] - [0]$$

$$\left[\frac{9}{2} + 18 - \frac{27}{3} \right] = \frac{27}{2} = \boxed{13,5}$$