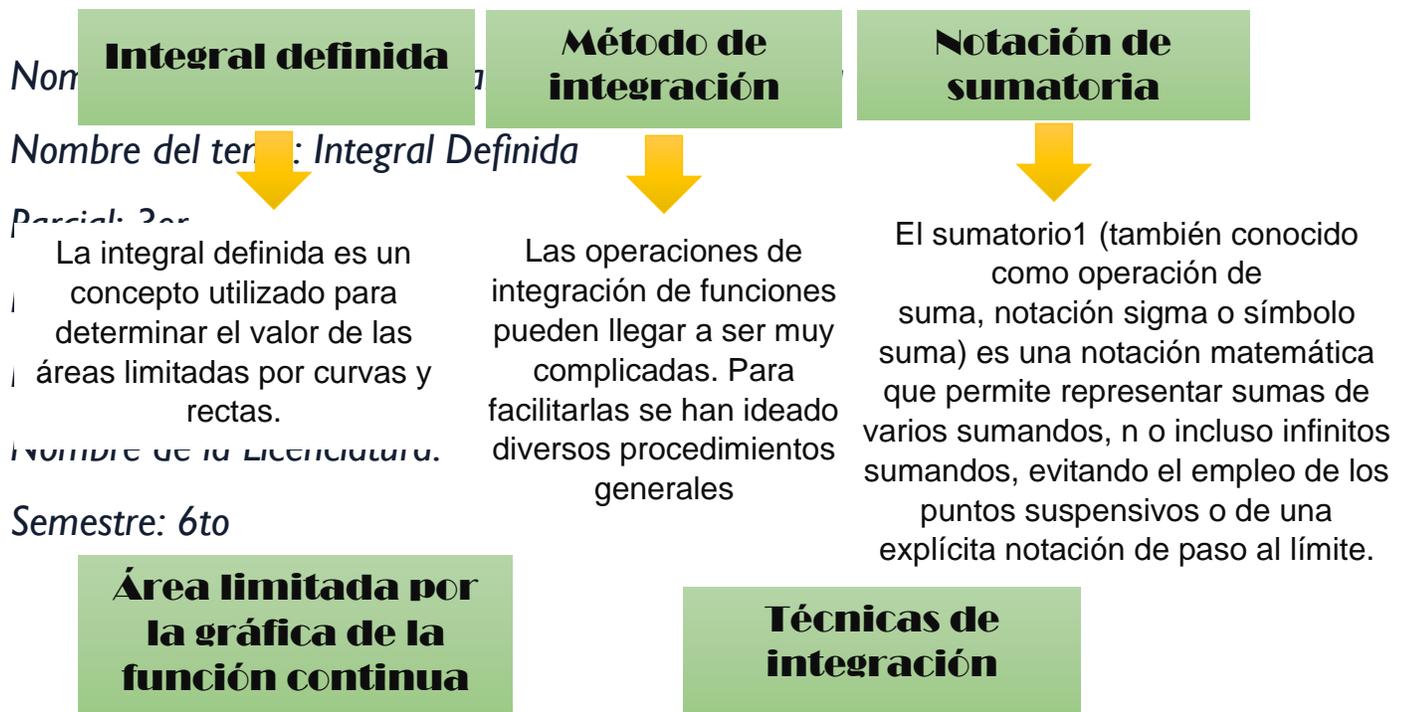




Mi Universidad

Mapa Conceptual



Resuelve los siguientes ejercicios.

1. $\int_1^2 x dx$

$$\int x^n dx = \frac{x^{n+1}}{n+1}$$

$$\int x dx = \frac{x^2}{2} \Big|_1^2 = \frac{(2)^2}{2} - \frac{(1)^2}{2}$$

2. $\int_{-6}^6 (3x^2 + 5) dx$

$$3 \int x^2 dx + 5 \int dx = \frac{3x^3}{3} + 5x + c = x^3 + 5x$$

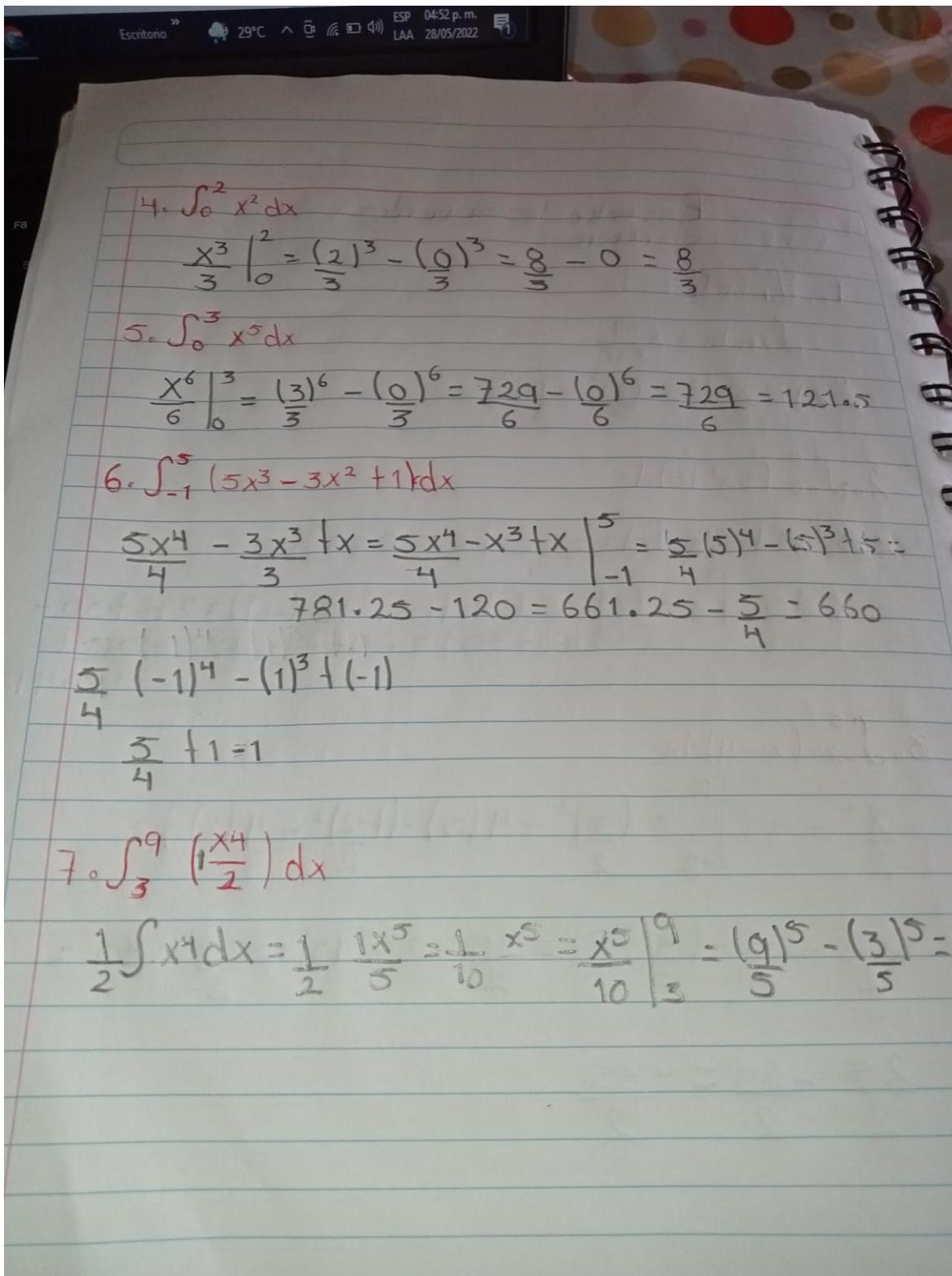
$$x^3 + 5x \Big|_{-6}^6 = (6)^3 + 5(6) - ((-6)^3 + 5(-6)) = 216 + 30 - (-216 - 30) = 246 - (-246) = 246 + 246 = 492$$

3. $\int_{-2}^5 (x - 4) dx$

$$\frac{x^2}{2} - 4x \Big|_{-2}^5 = \left(\frac{(5)^2}{2} - 4(5) - \left(\frac{(-2)^2}{2} - 4(2) \right) \right) =$$

$$\left(\frac{25}{2} - 20 - \left(\frac{4}{2} - 8 \right) \right) = \frac{25}{2} - 20 - (-10) = \frac{25}{2} - 10 = \frac{25}{2} - \frac{20}{2} = \frac{5}{2}$$

$$\frac{25}{2} - \frac{60}{2} = \frac{-35}{2}$$



$$4. \int_0^2 x^2 dx$$

$$\frac{x^3}{3} \Big|_0^2 = \frac{(2)^3}{3} - \frac{(0)^3}{3} = \frac{8}{3} - 0 = \frac{8}{3}$$

$$5. \int_0^3 x^5 dx$$

$$\frac{x^6}{6} \Big|_0^3 = \frac{(3)^6}{6} - \frac{(0)^6}{6} = \frac{729}{6} - \frac{0}{6} = \frac{729}{6} = 121.5$$

$$6. \int_{-1}^5 (5x^3 - 3x^2 + 1) dx$$

$$\frac{5x^4}{4} - \frac{3x^3}{3} + x = \frac{5x^4}{4} - x^3 + x \Big|_{-1}^5 = \frac{5(5)^4}{4} - (5)^3 + 5 = 781.25 - 120 = 661.25 - \frac{5}{4} = 660$$

$$\frac{5}{4} (-1)^4 - (1)^3 + (-1)$$

$$\frac{5}{4} + 1 = 1$$

$$7. \int_3^9 \left(\frac{x^4}{2}\right) dx$$

$$\frac{1}{2} \int x^4 dx = \frac{1}{2} \frac{1x^5}{5} = \frac{1}{10} x^5 = \frac{x^5}{10} \Big|_3^9 = \frac{(9)^5}{5} - \frac{(3)^5}{5} =$$