

**Nombre de alumno: David Ramírez  
López**

**Nombre del profesor: Jorge Enrique  
Albores**

**Nombre del trabajo: ejercicios 3**

**Materia: matemáticas aplicadas**

**Grado: 6° cuatrimestre**

**Grupo: BRH05EMC0120-A**

Comitán de Domínguez Chiapas a 07 de julio de 2022.

$$1_0 - \int e^x dx$$

$$\underline{e^x + C}$$

$$2_0 - \int e^{5x^2+1} x dx$$

$$f = 5x^2+1 \quad f' = 10x$$

$$\frac{1}{10} \int e^{5x^2+1} x dx$$

$$\underline{\frac{1}{10} e^{5x^2+1} + C}$$

$$3_0 - \int a^{10x^2+2} 3x dx$$

$$f = 10x^2+2 \quad f' = 20x$$

$$\frac{3}{20} \int a^{10x^2+2} 3x dx$$

$$\underline{\frac{3}{20} \frac{a^{10x^2+2}}{\ln a} + C}$$

$$4_0 - \int e^{\sqrt{x}} \frac{1}{\sqrt{x}} dx$$

$$f = \sqrt{x}$$

$$\frac{1}{2} x^{\frac{1}{2}-1} = \frac{1}{2} x^{-\frac{1}{2}}$$

$$= \frac{1}{2\sqrt{x}} \quad 2 \int e^{\sqrt{x}} \frac{1}{\sqrt{x}} dx$$

$$\underline{2 e^{\sqrt{x}} + C}$$

$$5_0 - \int \frac{10x^2}{12x^3+2} dx$$

$$f = 12x^3+2 \quad f' = 36x^2$$

$$\frac{10}{36} \int \frac{x^2}{12x^3+2} dx$$

$$\underline{\frac{10}{36} \ln |12x^3+2| + C}$$

$$6_0 - \int 10^{4x^3+2} x^2 dx$$

$$f = 4x^3+2 \quad f' = 12x^2$$

$$\frac{1}{12} \int 10^{4x^3+2} x^2 dx$$

$$\underline{\frac{1}{12} \frac{10^{4x^3+2}}{\ln 10} + C}$$

$$7_0 - \int e^{4x^2+1} 3x dx$$

$$f = 4x^2+1 \quad f' = 8x$$

$$\frac{3}{8} \int e^{4x^2+1} 3x dx$$

$$\underline{\frac{3}{8} e^{4x^2+1} + C}$$

$$8.- \int 15^{x^2-3} 2x dx$$

$$F = x^2 - 3 \quad F' = 2x$$

$$\frac{15^{x^2-3}}{\ln 15} + C$$

$$9.- \int e^{x^5+2} 3x^4 dx$$

$$F = x^5 + 2 \quad F' = 5x^4$$

$$\frac{3}{5} \int e^{x^5+2} 3x^4 dx$$

$$\frac{3}{5} e^{x^5+2} + C$$

$$10.- \int 3^{x^2+1} x dx$$

$$F = x^2 + 1 \quad F' = 2x$$

$$\frac{1}{2} \int 3^{x^2+1} x dx$$

$$\frac{1}{2} \frac{3^{x^2+1}}{\ln 3} + C$$

$$11.- \int \frac{3x^5}{2x^6-10} dx$$

$$F = 2x^6 - 10 \quad F' = 12x^5$$

$$\frac{3}{12} \int \frac{x^5}{2x^6-10} dx$$

$$\frac{3}{12} \ln |2x^6 - 10| + C$$

$$12.- \int e^{4x^{10}+2} 2x^9 dx$$

$$F = 4x^{10} + 2 \quad F' = 40x^9$$

$$\frac{2}{40} \int e^{4x^{10}+2} 2x^9 dx$$

$$\frac{2}{40} e^{4x^{10}+2} + C$$

$$13.- \int \frac{8x^5}{3x^6+1} dx$$

$$F = 3x^6 + 1 \quad F' = 18x^5$$

$$\frac{8}{18} \int \frac{x^5}{3x^6+1} dx$$

$$\frac{8}{18} \ln |3x^6 + 1| + C$$

$$14_0 - \int 4^{3x^2+1} x^3 dx$$

$$f = 3x^2+1 \quad f' = 6x$$

$$\frac{1}{6} \int 4^{3x^2+1} x^3 dx$$

$$\frac{1}{6} \frac{4^{3x^2+1}}{\ln 4} + C$$

$$15_0 - \int e^{x^2} x dx$$

$$f = x^2 \quad f' = 2x$$

$$\frac{1}{2} \int e^{x^2} x dx$$

$$\frac{1}{2} e^{x^2} + C$$

$$16_0 - \int 3^{x^2+1} 5x dx$$

$$f = x^2+1 \quad f' = 2x$$

$$\frac{5}{2} \int 3^{x^2+1} 5x dx$$

$$17_0 - \int 12^{4x^2+2} 5x dx$$

$$f = 4x^2+2 \quad f' = 8x$$

$$\frac{5}{8} \int 12^{4x^2+2} 5x dx$$

$$\frac{5}{8} \frac{12^{4x^2+2}}{\ln 12} + C$$

$$18_0 - \int e^{2x^6-3} 4x^6 dx$$

$$f = 2x^6-3 \quad f' = 12x^5$$

$$\frac{4}{12} \int e^{2x^6-3} 4x^6 dx$$

$$\frac{4}{12} e^{2x^6-3} + C$$