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**Nombre del trabajo: INTEGRALES3**

**Materia: matemática aplicada**

PASIÓN POR EDUCAR

**Grado: 6to cuatrimestre**

**Grupo: "A"**

① -  $\int e^x dx = \int u \left( \frac{du}{u} \right) = \int du$   
 $u = e^x \quad = u + c$   
 $\ln u = \ln e^x$   
 $\ln u = x \ln e$   
 $\ln u = x$   
 $dx = \frac{1}{u} du$   
 $\int e^x dx = e^x + c$

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

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③ -  $\int a^{20x+2} \frac{3x^2}{2} + c$

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④ -  $\int \frac{10x^2}{12x^2+2} dx = \frac{\int 20x}{36x+2} \cdot x + c$

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⑤ -  $\int 10 \cdot 4x^{2+2} x^2 dx$   
 $\int 10 \cdot 12x^{4+2} x + c$

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⑦ -  $\int e^{4x^2+1} 3x dx = \int e^{8x+1} \cdot 3x \cdot x + c$

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⑧ -  $\int 15x^{2-3} 2x dx$   
 $\int 15x \cdot 2x \cdot x + c$

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⑨ -  $\int e^{x^2+2} 3x^4 dx$   
 $\int e^{2x+2} 12x \cdot x + c$

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

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⑪ -  $\int \frac{3x^5}{2x^6-10} dx = \frac{15x}{12x-10} \cdot x + c$

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⑫ -  $\int e^{4x^{10+2}} 2x^9 dx$   
 $\int e^{40x^{12}} 18x \cdot x + c$

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⑬ -  $\int \frac{8x^5}{3x^6+1} dx = \frac{40x}{21x} \cdot x + c$

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⑭ -  $\int 4 \cdot 3x^{2+1} 2x^3 dx$   
 $\int 4 \cdot 6x^{2+1} 6x \cdot x + c$

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⑮ -  $\int e^{x^2} x dx$   $\int e^u du = e^u$   
 $= \frac{1}{2} \int e^{x^2} 2x dx$   $u = x^2$   
 $du = 2x dx$   
 $= \frac{1}{2} e^{x^2} + c$

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⑯ -  $\int 3x^{2+1} 5x dx$   
 $= \int 6x^{2+1} 5x \cdot x + c$

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⑰ -  $\int 12 \cdot 4x^{2+2} 5x dx$   
 $= \int 12 \cdot 8x^{2+2} 5x \cdot x + c$

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⑱ -  $\int e^{2x^6-3} 4x^5 dx$   
 $= \int e^{12x^6-3} 20x \cdot x + c$

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