Facts about Integration by Parts for Indefinite Integrals	**Explanation**
$\int u\ dv = uv - \int v\ du$	The common Integration by Parts Formula for Indefinite Integrals.
The LIATE Scale L - Logarithm Function I - Inverse Trigonometric Function $\uparrow u$ A - Algebraic Function (polynomials) T - Trigonometric Function $\downarrow dv$ E - Exponential Function (e^x or 10^x)	Use this LIATE scale to pick your u and dv. Pick your u to be something higher on this scale and dv to be something lower on this scale. This is just a guideline; there might be functions where you might not want to use the LIATE scale.
How to compute du where $u = f(x)$?	$du = f'(x)\ dx$
How to compute v where $dv = g'(x)\ dx$?	$v = \int dv = \int g'(x)\ dx = g(x)$

1. Evaluate $\int xe^x dx$ through the following parts.
   (a) Use the LIATE scale to assign your u and dv.

   (b) Find du (the differential of u) and v (antiderivative of dv).

   (c) Set up the integration by parts formula and find an antiderivative for the integral.

2. Evaluate $\int x^2 \ln(x)\, dx$ through the following parts.
   (a) Use the LIATE scale to assign your u and dv.

   (b) Find du (the differential of u) and v (antiderivative of dv).

   (c) Set up the integration by parts formula and find an antiderivative for the integral.

3. Evaluate $\int e^x sin(x)\, dx$ (You will have to use integration by parts twice).

4. Evaluate $\int_0^1 \arcsin(x)\ dx$.

5. Some additional practice.

   1. $\displaystyle\int 4x\cos(2-3x)\,dx$
   2. $\displaystyle\int_6^0 (2+5x)e^{x/3}\,dx$
   3. $\displaystyle\int x^2\cos(3x)\,dx$
   4. $\displaystyle\int t^7\sin\left(2t^4\right)\,dt$