4.3 Handout II: Parts

Tips:

- When choosing u and dv, try to pick u to be something easy to differentiate and dv something easy to integrate.
- Remember: the goal is to get a simpler looking integral out of the parts formula.
- Don't be afraid to use multiple techniques!

1. Compute the following integrals:

   (a) $\int 4x\cos(2-3x)\,dx$

   (b) $\int \sqrt{t}(t-5)\,dt$

2. Compute more integrals!

   (a) $\int x\ln(x)\,dx$

   (b) $\int e^x\cos(x)\,dx$

3. Even more integrals.

(a) $\int x^2 e^{-x}\,dx$

(b) $\int \cos(x)\ln(\sin(x))\,dx$

(c) $\int x\sin(x)\cos(x)\,dx$

(d) $\int \cos(\sqrt{x})\,dx$. (Hint: first do the substitution $u = \sqrt{(}x)$ and do some switch-o change-o.)