

### § 8.1 USING BASIC INTEGRATION FORMULAS

- 0 u-sub.
- 1 complete the square
- 2 Trig. ID.
- 3 MULT. & DIV. BY CONJUGATE
- 4 POLYNOMIAL LONG DIV.
- 5 SPLITTING UP FRACTIONS
- 6 "ADVANCED" u-SUB (u-SUB INCEPTION)

ex 1.  $\int \frac{1}{\sqrt{x^2 - 6x + 5}} dx$

ex 2.  $\int \frac{1}{\sec \theta + \tan \theta} d\theta$

ex 3.  $\int_0^{\pi/2} \sqrt{1 - \cos \theta} d\theta$

ex 4.  $\int \frac{8x^2 + 10x + 3}{4x + 5} dx$

ex 5.  $\int \frac{x + 2\sqrt{x-1}}{2x\sqrt{x-1}} dx$  ,  $\int \frac{1}{1+e^x} dx = \int \frac{(1+e^x) - e^x}{1+e^x} dx$

ex 6.  $\int x^7 \sqrt{x^4 + 1} dx$  let  $u = x^4 + 1$  ( $\rightarrow x^4 = u - 1$ )