Remainder degree < divisor degree</p>
= \$ Stop

EY,

$$\int \frac{(5x-3)dx}{x^2-13x+42} = \int \frac{5x-3}{(x-6)(x-7)} dx = \int \frac{A}{x-6} + \frac{B}{x-7} dx = \int \frac{-27}{x-6} + \frac{32}{x-7} dx$$
  
see: Rational =) Partial Fraction =  $-27\ln|x-1|+32\ln|x-7|+c$   
$$\frac{-\log r}{5x-3} = A(x-7) + B(x-6) = (A+B)x + (-7A-6B)$$

$$\begin{array}{c} x = 7: \ 35 - 3 = \boxed{B} = 32 \\ x = 6: \ 30 - 3 = \boxed{A} = -27 \end{array} \qquad \begin{array}{c} A + B = 5 \\ -7A - 6B = -3 \end{array} \xrightarrow{\rightarrow} \end{array}$$

Exam 1 Guide

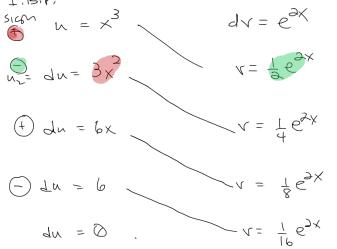
1.
$$\int x^4 e^{3x} \, dx =$$

2.  
$$\int \frac{4x - 1}{x^2 - 5x - 14} \, dx =$$

3. 
$$\int x^4 \sec^2(x^5) \, dx =$$

$$\int x^{3}e^{2x}dx = x^{3}e^{2x} - \int 3x^{3}e^{2x}dx = x^{3}e^{2x} - \left[\frac{3x^{2}}{4}e^{2x} - \int (6x \cdot \frac{1}{4}e^{2x})dx\right]$$





 $\frac{3}{2}e^{3x} - \frac{3x^{2}}{4}e^{3x} + \frac{6x}{8}e^{3x} - \frac{6}{16}e^{2x} + C$