MATH 426

7.4 16. 
$$\int_{1}^{2} \frac{x^{3} + 4x^{2} + x - 1}{x^{3} + x^{2}} dx \qquad x^{\frac{3}{4}} x^{\frac{3}{2}} \frac{x^{\frac{3}{4}} + 4x^{2} + x - 1}{-x^{3} + x^{2} + 0x + 0}$$

$$\int_{1}^{2} \frac{x^{3} + 4x^{2} + x - 1}{x^{3} + x^{2}} dx \qquad \frac{3x^{2} + x - 1}{x^{2}(x + 1)}$$

$$\int_{1}^{2} \frac{3x^{2} + x - 1}{x^{3} + x^{2}} dx \qquad \frac{3x^{3} + x - 1}{x^{2}(x + 1)}$$

$$\frac{A}{x + 1} + \frac{B}{x^{2}} = \frac{3x^{2} + x - 1}{(x^{2})^{2}(x + 1)}$$

$$A(x^{2}) + B(x+1) = 3x^{2} + x - 1$$

$$x=0 \quad A(0) + B(1) = 0 + 0 - 1, \quad B = -1$$

$$x=-1 \quad A(1) + B(0) = 3 + 1 - 1 \quad A = 1$$

$$\int \frac{1}{x+1} - \frac{1}{x^{2}} dx \quad x + \ln|x+1| - \frac{1}{x} + C|$$

$$2 + \ln 3 - \frac{1}{2} - \left[x + \ln 2 - x\right] = \frac{2}{2} + \ln 3 - \ln 2$$

 MXH 426

$$\int_{2}^{3} \frac{x(3-5x)}{(3x-1)(x-1)^{2}} dx \qquad \frac{A}{3x-1} + \frac{B}{(x-1)^{2}} = \frac{x(3-5x)}{(3x-1)(x-1)^{2}}$$

$$A\left(x^{2}-2x+1\right) + B\left(3x-1\right) = x(3-5x)$$

$$x = \frac{1}{3} A\left(-\frac{2}{3}\right)^{2} + B\left(6\right) = \frac{1}{2}\left(\frac{8}{3}\right)^{2} + \frac{4}{9}A = \frac{4}{9}A = \frac{4}{9}A = -\frac{1}{9}$$

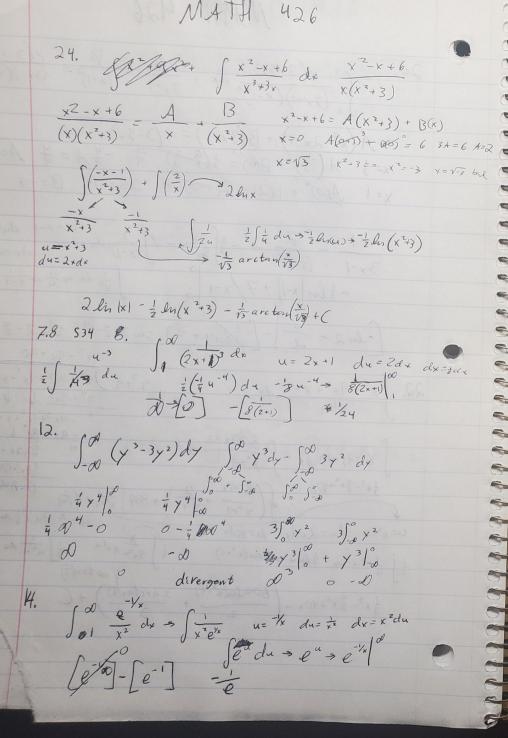
$$x = 1 \quad A\left(6\right)^{2} + B\left(2\right) = 2\left(\frac{5-10}{3}\right)^{-1}H \quad 2B = -1H \quad B = -\frac{7}{9}$$

$$-\frac{7}{3x-1} - \frac{7}{(x-1)^{2}} \rightarrow -\frac{1}{3}\left(\frac{1}{3x-1} - \frac{7}{3x-1}\right)^{-1}dx \qquad dx = dx$$

$$-\frac{1}{3}\ln|x-1| + \frac{7}{7}|x-1| = -\frac{1}{3}\ln|x-1| + \frac{7}{7}\left(\frac{1}{x-1}\right)^{-1}dx \qquad dx = dx$$

$$-\frac{1}{3}\ln|x-1| + \frac{7}{7}|x-1| = -\frac{1}{3}\ln|x-1| + \frac{7}{7}\left(\frac{1}{x-1}\right)^{-1}dx \Rightarrow \frac{7}{x-1}$$

$$-\frac{1}{3}\ln|x-1| + \frac{7}{7}\left(\frac{1}{x-1}\right)^{-1}dx \Rightarrow \frac{7}{3}\ln|x-1| + \frac{7}{3}\left(\frac{1}{x-1}\right)^{-1}dx \Rightarrow \frac{7}{3}\ln|x-1| + \frac{7}{$$



MATH 426
16. So sin the cost do uncost du = sin od,

- Se du = eu = ecost

[e cost] i [e cost] undefind