$$\int \frac{3}{2x+1}\,dx = 3\int \frac{1}{2x+1}\,dx =$$

$$= \frac{3}{2}\int \frac{2\,dx}{2x+1} = \frac{3}{2}\int \frac{d(2x)}{2x+1} = \frac{3}{2}\int \frac{d(2x+1)}{2x+1} =$$

$$= \frac{3}{2}\ln|2x+1| + c$$

$$\frac{1-x^2+3x^4}{2-x} = (-3x^3-6x^2-11x-22) + \frac{45}{2-x}$$

$$+\frac{45}{2-x}$$

$$\begin{array}{r|l} 3x^4+0x^3-x^2+0x+1 & -x+2 \\ \hline 3x^4-6x^3 & -3x^3-6x^2 \\ \hline //\ 6x^3-x^2+0x+1 & -11x-22 \\ 6x^3-12x^2 & \\ \hline //\ +11x^2+0x+1 & \\ +11x^2-22x & \\ \hline //\ 22x+1 & \\ 22x-44 & \\ \hline //\ 45 & \end{array}$$

$$\int \frac{2x-1}{x^2-5x+6}\,dx$$



$x^2-5x+6=0 \quad x_{1,2}=\frac{5\pm\sqrt{25-24}}{2}=\frac{5\pm1}{2}\begin{cases}2\\3\end{cases}$

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

$$=\frac{Ax-3A+Bx-2B}{(x-2)(x-3)}$$

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

$$\begin{cases}A+B=2\\-3A-2B=-1\end{cases}\quad\begin{cases}A=2-B\\3(2-B)+2B=1\end{cases}\quad\begin{cases}A=2-B\\6-3B+2B=1\end{cases}$$

$$\begin{cases}A=-3\\B=5\end{cases}\qquad \frac{2x-1}{(x-3)(x-2)}=\frac{-3}{x-2}+\frac{5}{x-3}$$