Use properties of logarithms to write the expression as a single logarithm.

$$f(x)=3\ln(x+4)-2\ln(x-3)+5\ln(x-1)$$

- Remember the laws of logarithms:

$$\log ab=\log a+\log b$$

$$\log\frac{a}{b}=\log a-\log b$$

$$\log a^b=b\log a$$

- So $f(x)=3\ln(x+4)-2\ln(x-3)+5\ln(x-1)=\ln(x+4)^3-\ln(x-3)^2+\ln(x-1)^5$

$$=\ln\frac{(x+4)^3}{(x-3)^2}+\ln(x-1)^5$$

$$=\ln\frac{(x+4)^3(x-1)^5}{(x-3)^2}$$