

The curve  $y = \ln x$  is transformed by:

a reflection in the  $x$ -axis,

followed by a stretch with scale factor 3 parallel to the  $y$ -axis,  
followed by a translation in the positive  $y$ -direction by  $\ln 4$ .

Find the equation of the resulting curve, giving your answer in the form  $y = \ln(f(x))$ .

[4]