Express $\dfrac{3x+32}{(x+4)(6-x)}$ in partial fractions and hence evaluate

$$\int_{3}^{4} \frac{3x+32}{(x+4)(6-x)}\,dx.$$

Give your answer in the form $\ln\left(\dfrac{p}{q}\right)$. **9**

Answer:

$$\int_{3}^{4}\left(\frac{2}{(x+4)}+\frac{5}{(6-x)}\right)dx$$

$$=\ln\frac{486}{49}$$