

**2.**

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$$\begin{aligned}\int_1^{+\infty} \frac{7}{x^2 + 5x + 6} dx &= \int_1^{+\infty} \frac{7}{(x+2)(x+3)} dx = \int_1^{+\infty} \left( \frac{7}{x+2} - \frac{7}{x+3} \right) dx = \\ &= \left[ 7 \ln(x+2) - 7 \ln(x+3) \right]_1^{+\infty} = 7 \left[ \ln \frac{x+2}{x+3} \right]_1^{+\infty} = \\ &= 7 \left( \lim_{x \rightarrow +\infty} \ln \frac{x+2}{x+3} - \ln \frac{3}{4} \right) = -7 \ln \frac{3}{4} = 7 \ln \frac{4}{3}\end{aligned}$$