

INTEGRAL MISCELLANY

1. Use partial fractions to evaluate the integral: $\int \frac{3x}{x^2 - x - 2} dx$.
2. Find a partial fractions decomposition for $\frac{1}{x^2(1+x)}$. Check to make sure your solution works.

- 3.** Find the arc length of the parabola $y = \frac{1}{4}x^2$ for $0 \leq x \leq 4$. Arc length is $L = \int_a^b \sqrt{1 + \left(\frac{dy}{dx}\right)^2} dx$.