Calculus 2 Workbook

Partial fractions

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DISTINCT LINEAR FACTORS

1. Use partial fractions to evaluate the integral.

$$\int \frac{4x+5}{x^2+5x+6}\,dx$$

DISTINCT QUADRATIC FACTORS

1. Use partial fractions to evaluate the integral.

$$\int \frac{3x+6}{(x^2+2)(x^2+1)}\,dx$$

REPEATED LINEAR FACTORS

1. Use partial fractions to evaluate the integral.

$$\int \frac{5x-3}{(x+2)^2}\,dx$$

2. Use partial fractions to evaluate the integral.

$$\int \frac{x+12}{(3x-2)^2}\,dx$$

3. Use partial fractions to evaluate the integral.

$$\int \frac{7x-4}{(5x+1)^2}\,dx$$

4. Use partial fractions to evaluate the integral.

$$\int \frac{12x+9}{(2x+7)^2}\,dx$$

5. Use partial fractions to evaluate the integral.

$$\int \frac{24x + 41}{(3x + 4)^2}\, dx$$

REPEATED QUADRATIC FACTORS

1. Rewrite the integral using partial fractions, but do not evaluate it.

$$\int \frac{x^2 - 3x + 2}{(x^2 + 2)^2}\, dx$$

2. Rewrite the integral using partial fractions, but do not evaluate it.

$$\int \frac{x^2 - 4x + 6}{(x^2 + 3)^2}\, dx$$

3. Rewrite the integral using partial fractions, but do not evaluate it.

$$\int \frac{4x^3 - 2x^2 + x + 1}{(2x^2 + 1)^2}\, dx$$

4. Rewrite the integral using partial fractions, but do not evaluate it.

$$\int \frac{x^3 - 2x^2 + 3x + 5}{(x^2 + 1)^3}\, dx$$

RATIONALIZING SUBSTITUTIONS

■ 1. Use a rationalizing substitution to rewrite the integral in terms of u, but don't integrate it.

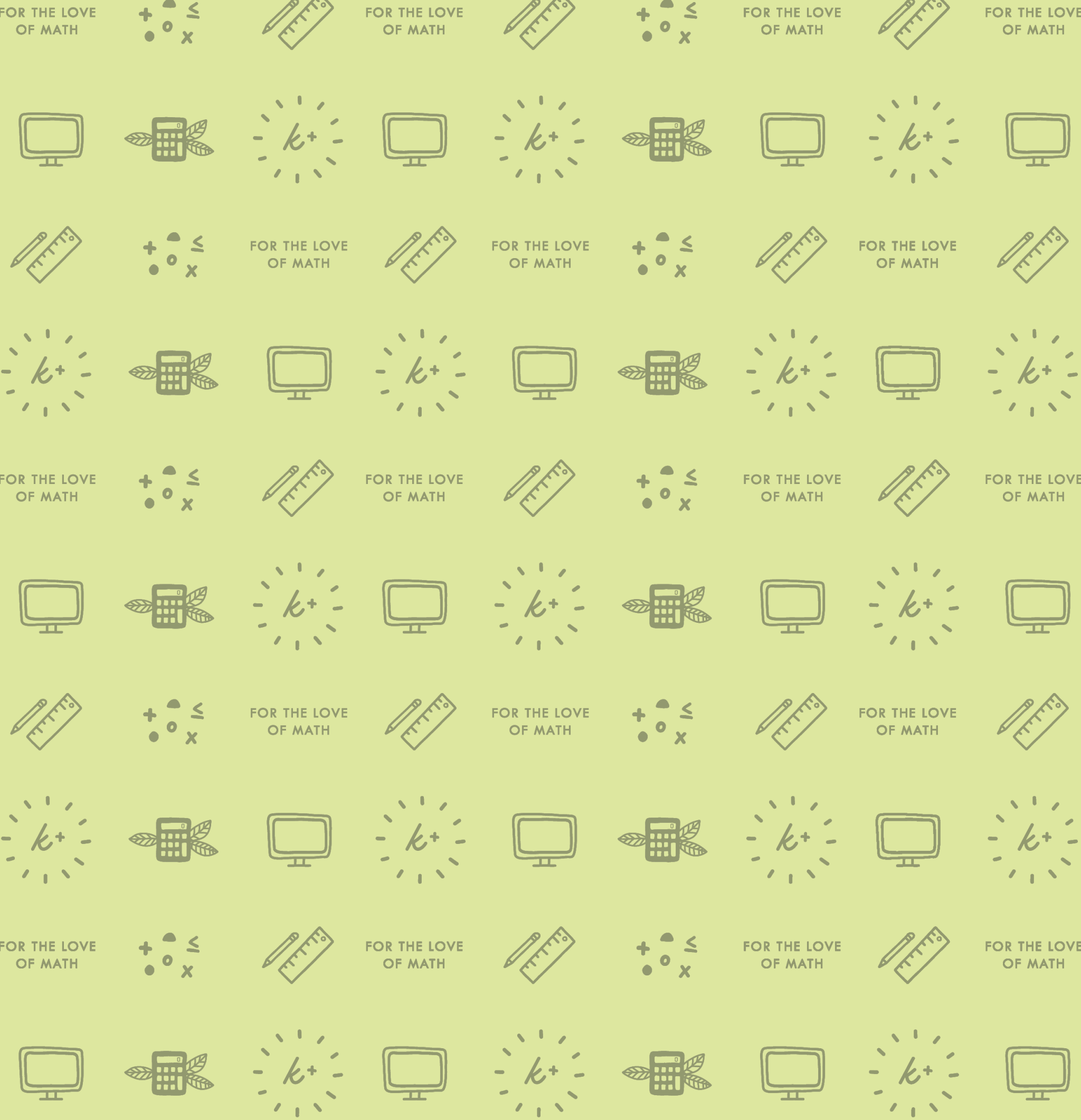
$$\int \frac{\sqrt{x+16}}{x}\,dx$$

■ 2. Use a rationalizing substitution to rewrite the integral in terms of u, but don't integrate it.

$$\int \frac{\sqrt{3x+5}}{x}\,dx$$

■ 3. Use a rationalizing substitution to rewrite the integral in terms of u, but don't integrate it.

$$\int \frac{\sqrt{7x-2}}{x}\,dx$$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