Calculus 2 Workbook

Trigonometric substitution

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TRIGONOMETRIC SUBSTITUTION WITH SECANT

■ 1. Set up and simplify the integral for trig substitution, but don't integrate.

$$\int \frac{3}{\sqrt{9x^2+6x}}\,dx$$

■ 2. Set up and simplify the integral for trig substitution, but don't integrate.

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

■ 3. Set up and simplify the integral for trig substitution, but don't integrate.

$$\int \frac{dx}{x^2\sqrt{x^2-9}}$$

■ 4. Set up and simplify the integral for trig substitution, but don't integrate.

$$\int \frac{4\ dx}{x^2\sqrt{x^2-25}}$$

TRIGONOMETRIC SUBSTITUTION WITH SINE

■ 1. Set up and simplify the integral for trig substitution, but don't integrate.

$$\int \frac{3x}{\sqrt{64-49x^2}}\,dx$$

■ 2. Set up and simplify the integral for trig substitution, but don't integrate.

$$\int \frac{2x}{\sqrt{121-144x^2}}\,dx$$

■ 3. Set up and simplify the integral for trig substitution, but don't integrate.

$$\int \frac{6x}{\sqrt{81-36x^2}}\,dx$$

■ 4. Set up and simplify the integral for trig substitution, but don't integrate.

$$\int \frac{35x}{\sqrt{25 - 100x^2}}\, dx$$

TRIGONOMETRIC SUBSTITUTION WITH TANGENT

■ 1. Set up and simplify the integral for trig substitution, but don't integrate.

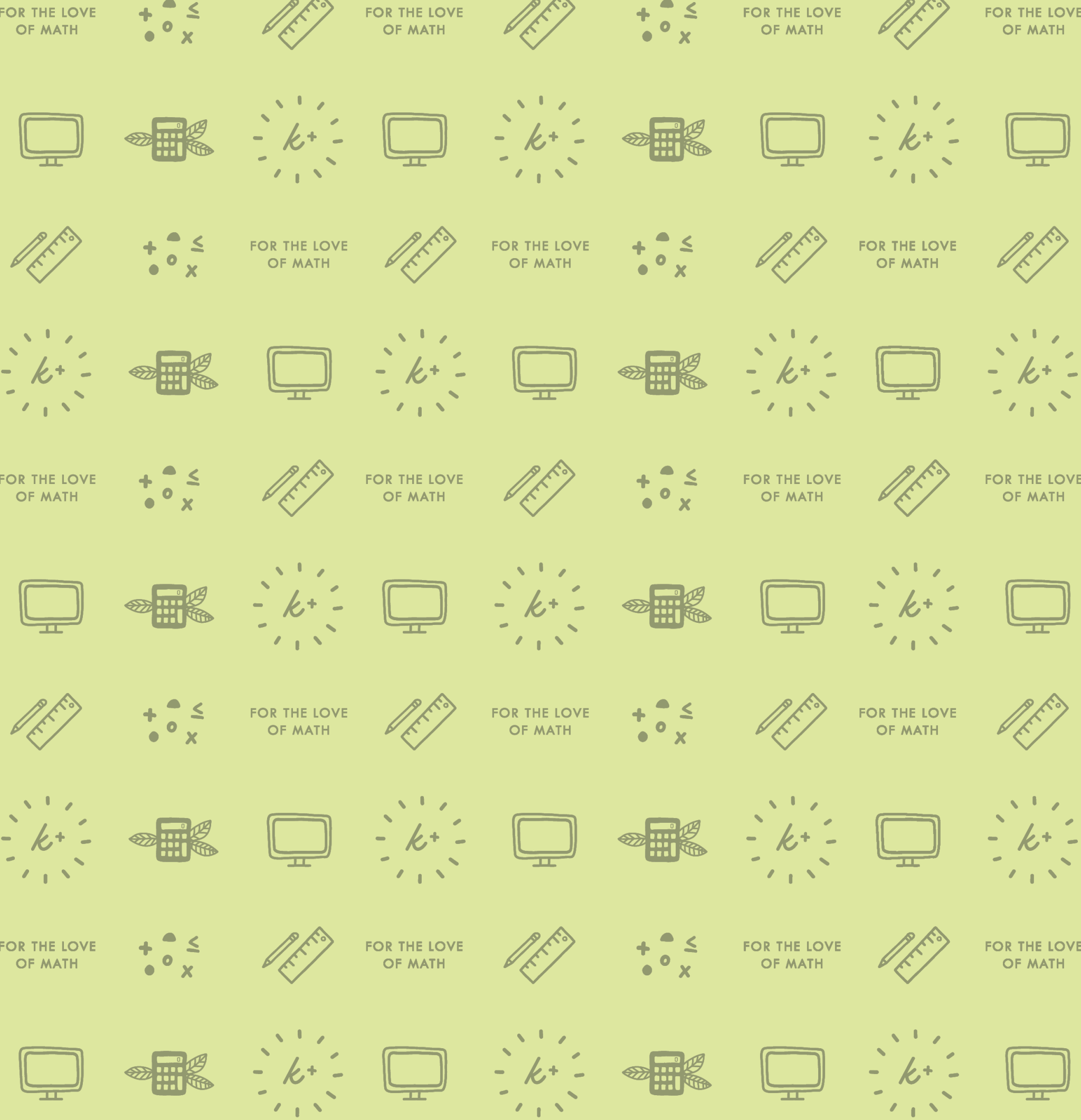
$$\int \sqrt{36x^2 + 25}\ dx$$

■ 2. Set up and simplify the integral for trig substitution, but don't integrate.

$$\int \sqrt{4x^2 + 81}\ dx$$

■ 3. Set up and simplify the integral for trig substitution, but don't integrate.

$$\int \frac{7}{\sqrt{x^2 + 4x + 8}}\ dx$$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