Calculus 2 Workbook

Arc length

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ARC LENTH OF Y=F(X)

■ 1. Find the arc length of the curve over $[0,2]$.

$$y = \frac{4\sqrt{2}}{3}x^{\frac{3}{2}} + 6$$

■ 2. Find the arc length of the curve over $[-3,3]$. Round your answer to the nearest three decimal places.

$$y = x^2 - 3$$

■ 3. Set up the arc length integral of the curve over $[-1,2]$. Do not evaluate the integral.

$$y = \frac{x^3}{3} + x^2 + 5$$

■ 4. Set up the arc length integral of the curve over $[-\pi, \pi]$. Do not evaluate the integral.

$$y = \sin x - 5$$

5. Set up the arc length integral of the curve over $[-\pi/4,\pi/4]$. Do not evaluate the integral.

$$y = \tan x \sec x + 2$$

ARC LENTH OF X=G(Y)

1. Find the arc length of the curve on the interval $1 \leq y \leq 6$.

$$x = \frac{y^2}{2} - \frac{\ln y}{4} - 8$$

2. Find the arc length of the curve on the interval $0 \leq y \leq 4$.

$$x = \frac{1}{3}(y^2 + 2)^{\frac{3}{2}} + 5$$

3. Find the arc length of the curve on the interval $4 \leq y \leq 16$.

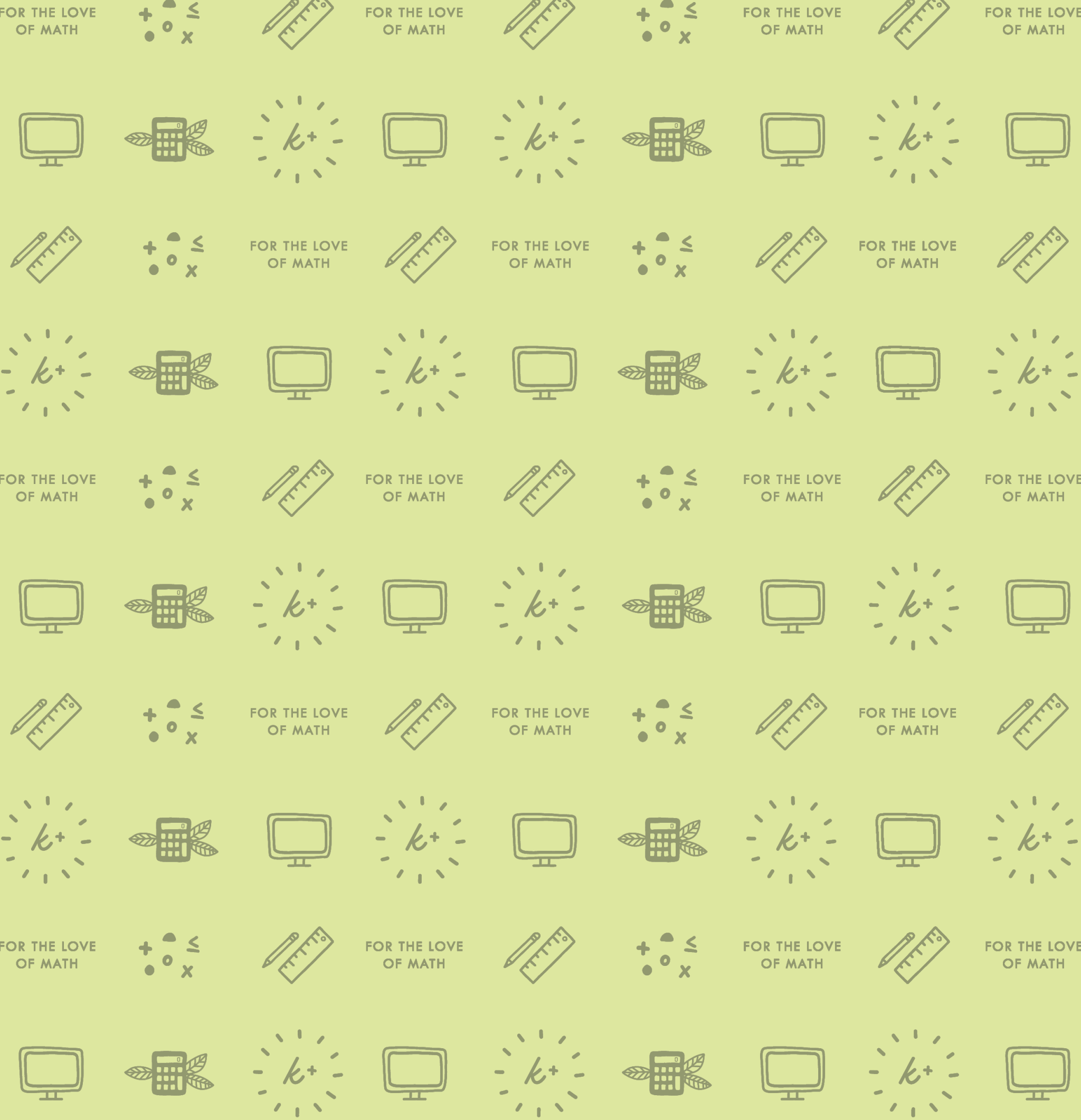
$$x = y^{\frac{3}{2}} + 15$$

4. Find the arc length of the curve on the interval $1 \leq y \leq 8$.

$$x = \left(1 - y^{\frac{2}{3}}\right)^{\frac{3}{2}}$$

5. Find the arc length of the curve on the interval $1 \leq y \leq 5$.

$$x = \frac{y^2}{8} - \ln y$$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