Calculus 2 Workbook

Average value

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AVERAGE VALUE

1. Find the average value of $f(x)$ over the interval $[-3,5]$.

$$f(x) = -3x^3 - 5x^2 + x + 4$$

2. Find the average value of $g(x)$ over the interval $[-4,3]$.

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

3. Find the average value of $h(x)$ over the interval $[-2,3]$.

$$h(x) = 3(2x - 5)^2$$

4. Set up the average value formula for $f(x)$ over the interval $[-4,4]$. Do not evaluate the integral.

$$f(x) = \sqrt{16 - x^2}$$

MEAN VALUE THEOREM FOR INTEGRALS

1. Use the Mean Value Theorem for integrals to find a value for $f(c)$.

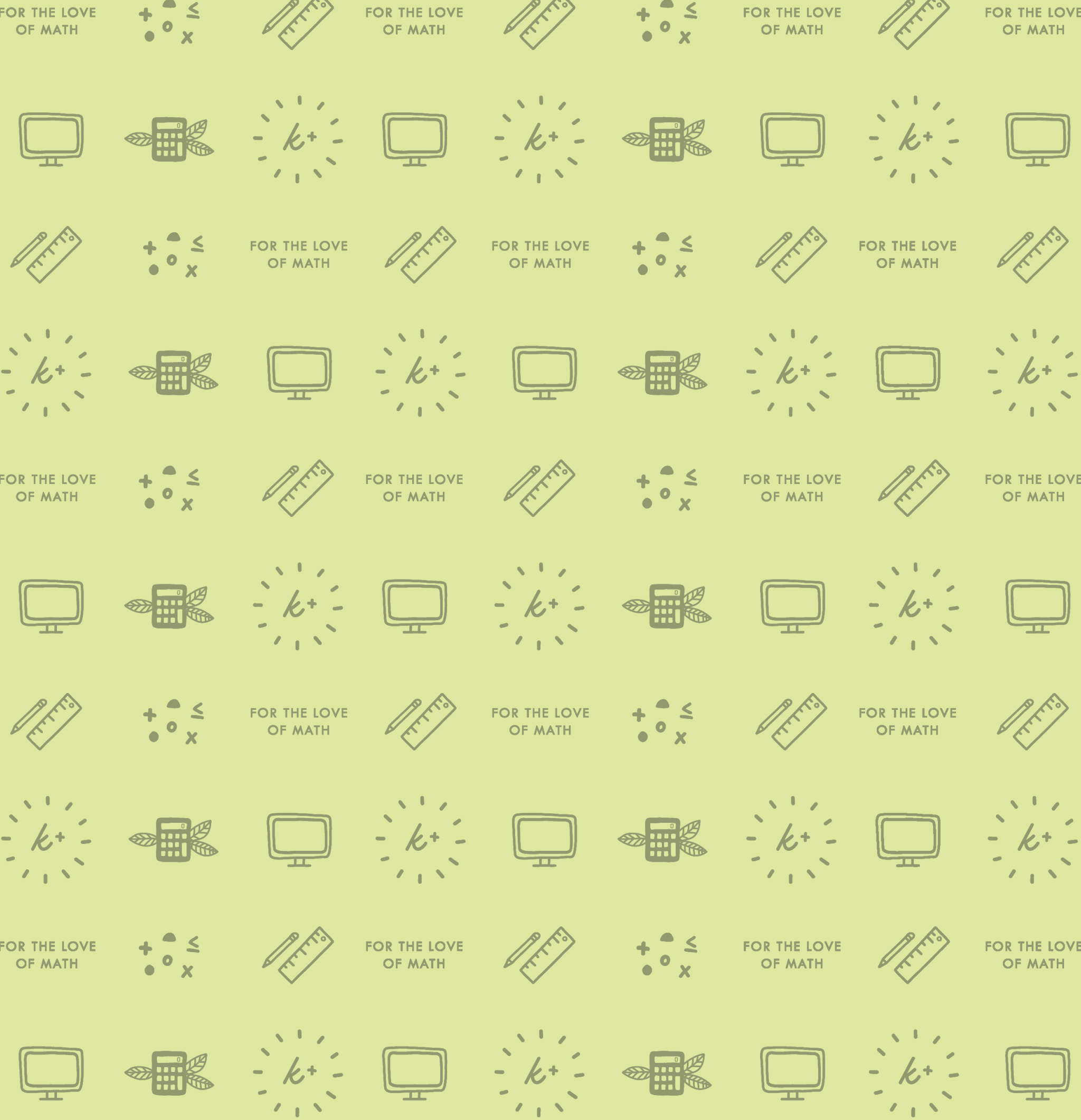
$$\int_{4}^{20} f(x)\,dx = 26$$

2. Use the Mean Value Theorem for integrals to find a value for $g(c)$.

$$\int_{-15}^{35} g(x)\,dx = -20$$

3. Use the Mean Value Theorem for integrals to find a value for $h(c)$.

$$\int_{-1}^{5} h(x)\,dx = 48$$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