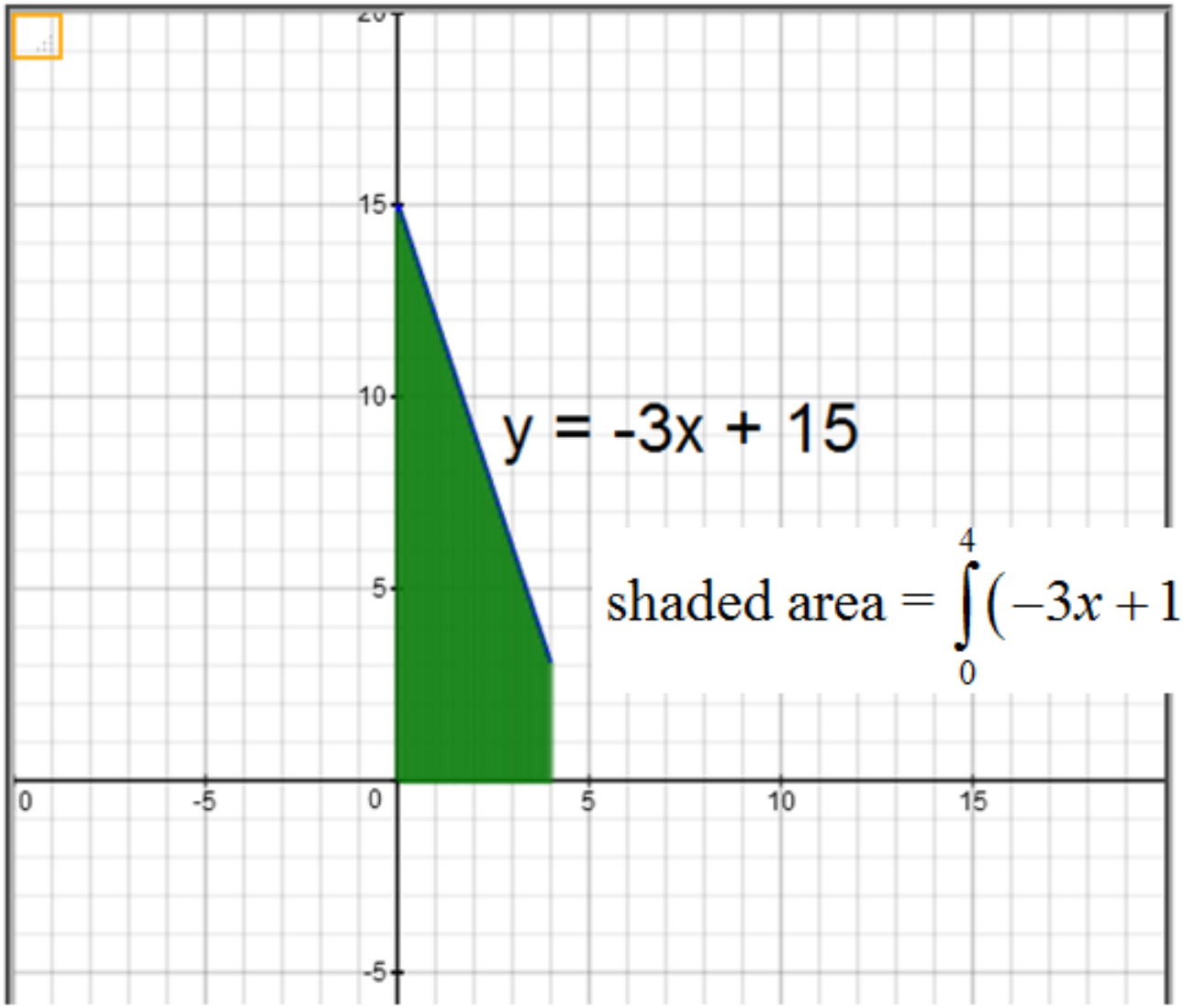
Calculus I Section 4.3 Notes

Set up definite integral for finding the shaded area.

$f(x) = -3x + 15$



$$\text{shaded area} = \int_0^4 (-3x + 15)\,dx$$

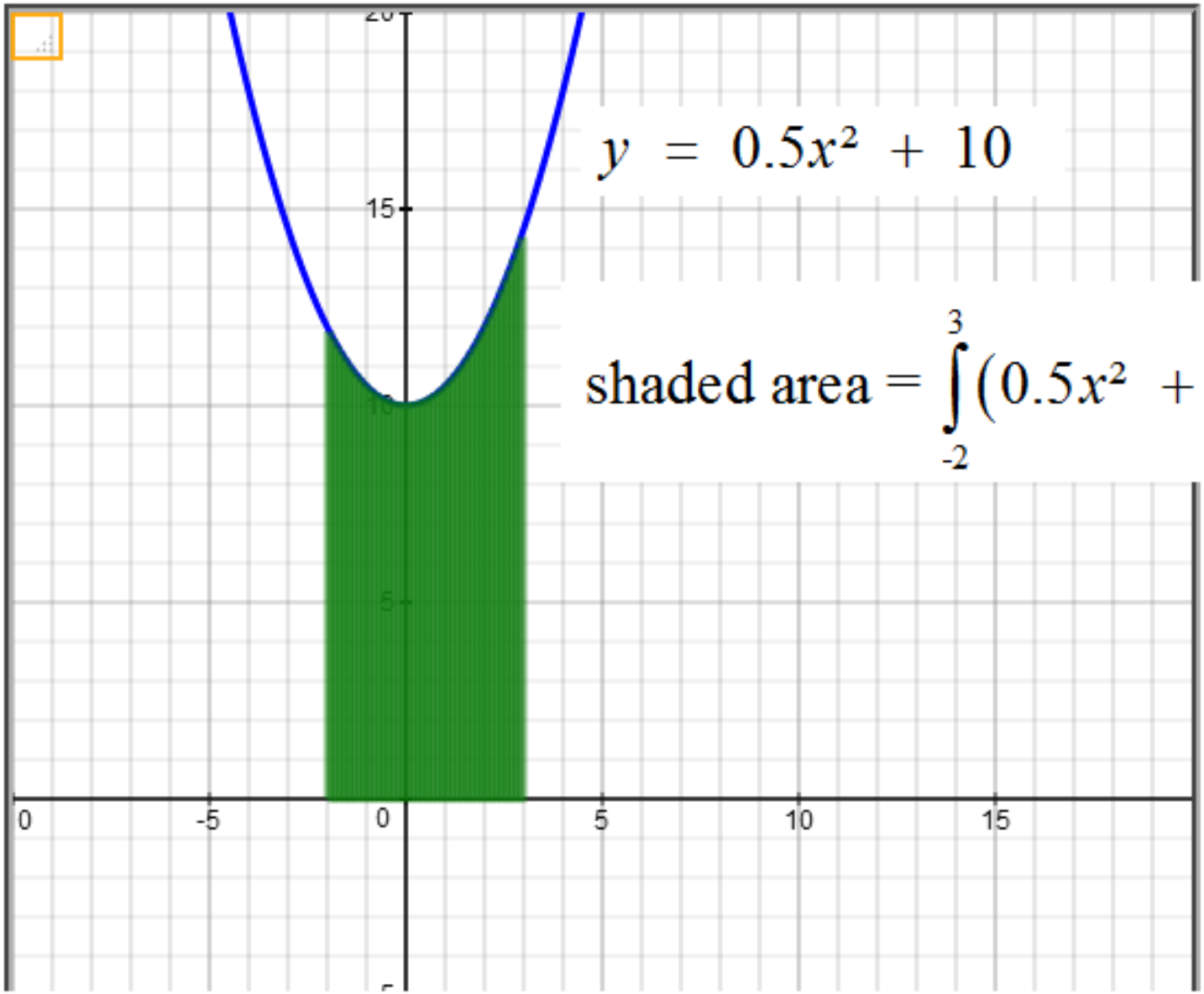
$$f(x) = -3x + 15$$

$$\text{shaded area} = \int_0^4 f(x)\,dx$$

$$\text{shaded area} = \int_0^4 (-3x + 15)\,dx$$

Set up definite integral for finding the shaded area.

$f(x) = 0.5x^2 + 10$



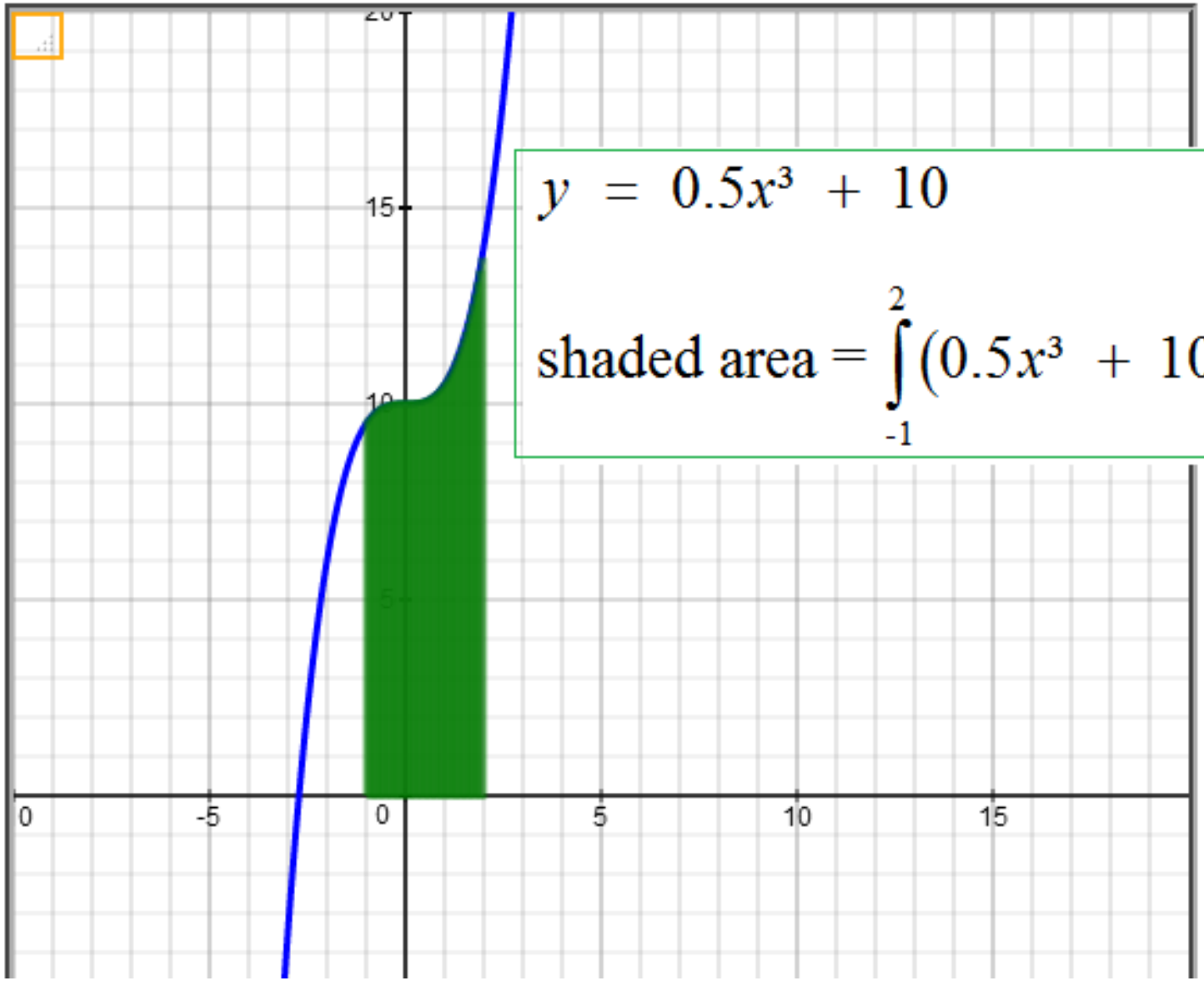
$$\text{shaded area} = \int_{-2}^{3} (0.5x^2 + 10)\,dx$$

$$f(x) = 0.5x^2 + 10$$

$$\text{shaded area} = \int_{-2}^{3} f(x)dx = \int_{-2}^{3} (0.5x^2 + 10)dx =$$

Set up definite integral for finding the shaded area.

$f(x) = 0.5x^3 + 10$



$y = 0.5x^3 + 10$

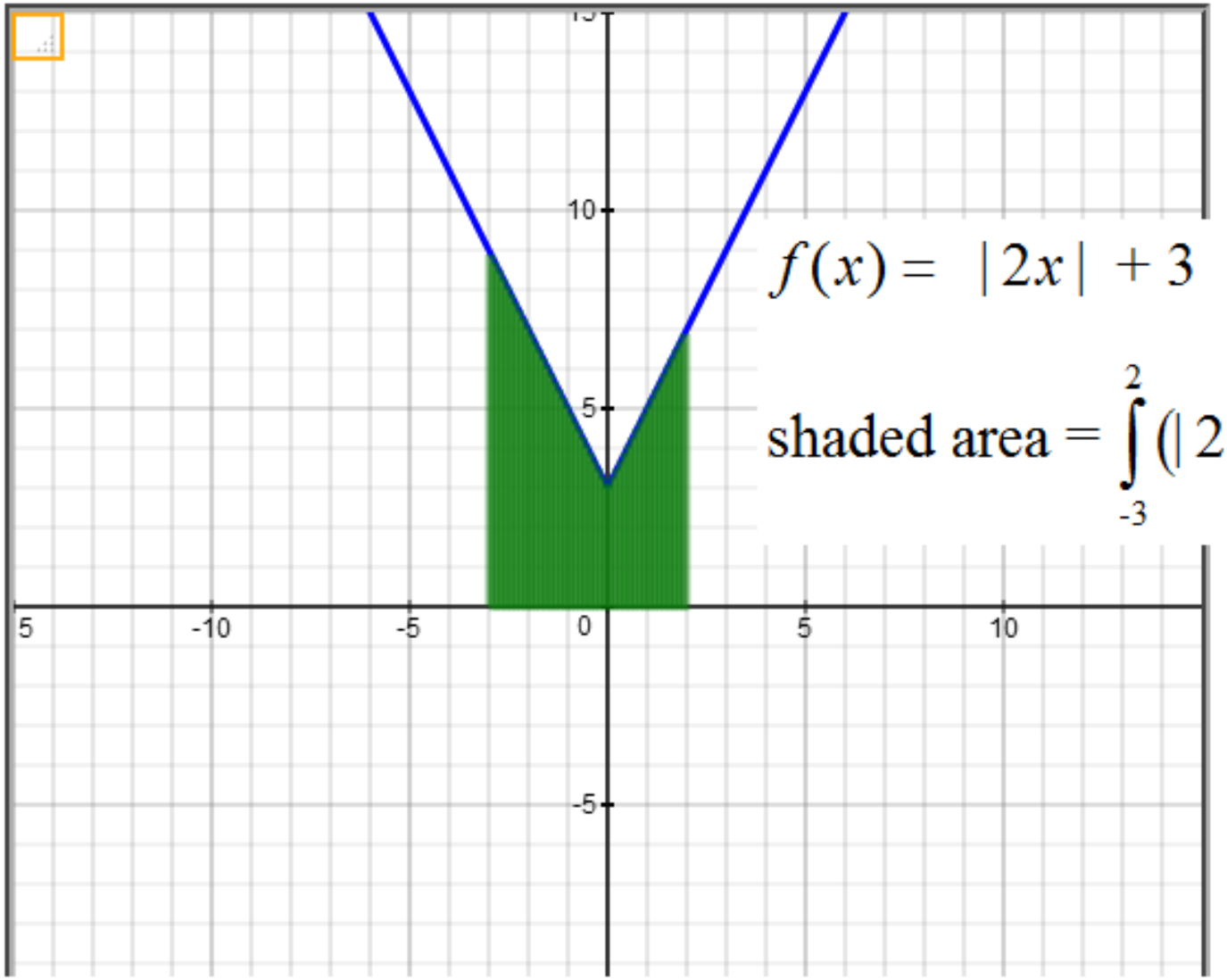
$$\text{shaded area} = \int_{-1}^{2} (0.5x^3 + 10)\,dx$$

$$f(x) = 0.5x^3 + 10$$

$$\text{shaded area} = \int_{-1}^{2} f(x)dx = \int_{-1}^{2} (0.5x^3 + 10)dx$$

Set up two definite integrals for finding the shaded area.

$f(x) = |2x| + 3$



$f(x) = |2x| + 3$

$$\text{shaded area} = \int_{-3}^{2} (|2x| + 3)\,dx$$

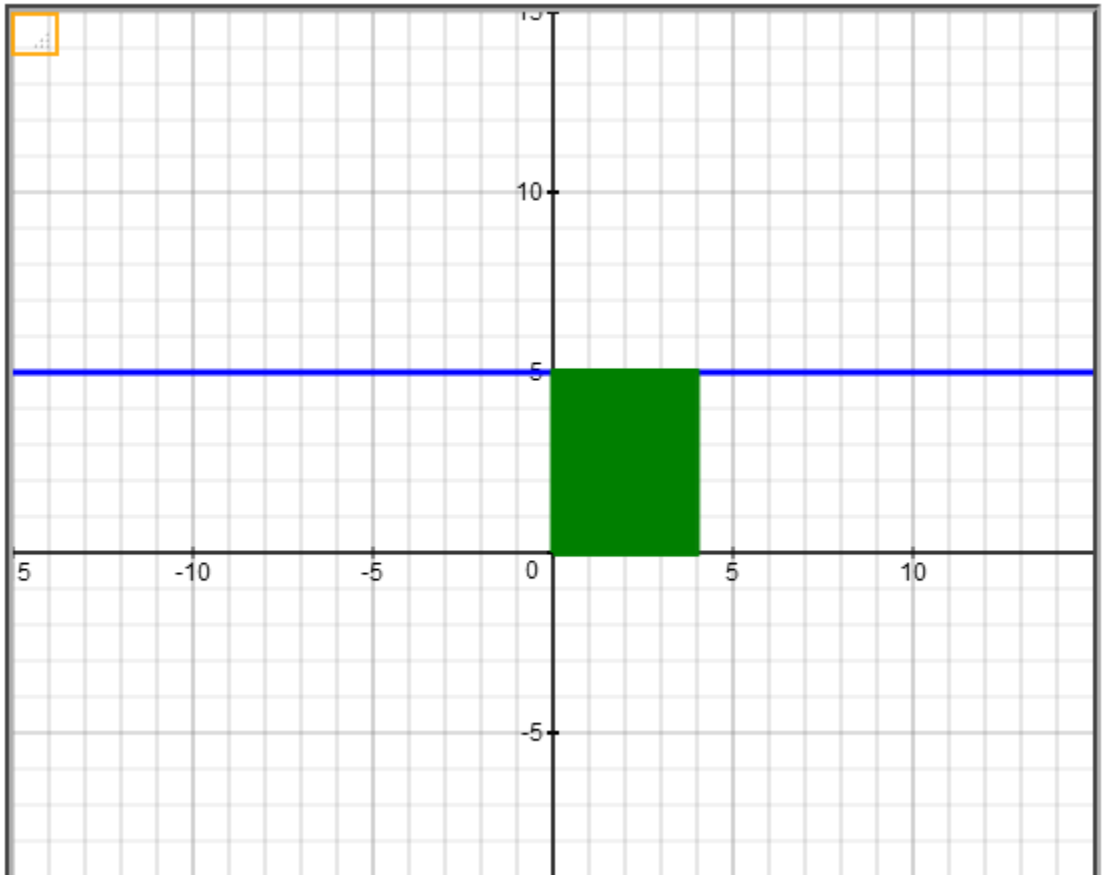
$$f(x) = |2x| + 3$$

$$\text{shaded area} = \int_{-3}^{2} f(x)dx = \int_{-3}^{2} (|2x| + 3)dx$$

Draw the shaded area.

$$\text{Shaded Area} = \int_0^4 5\,dx$$

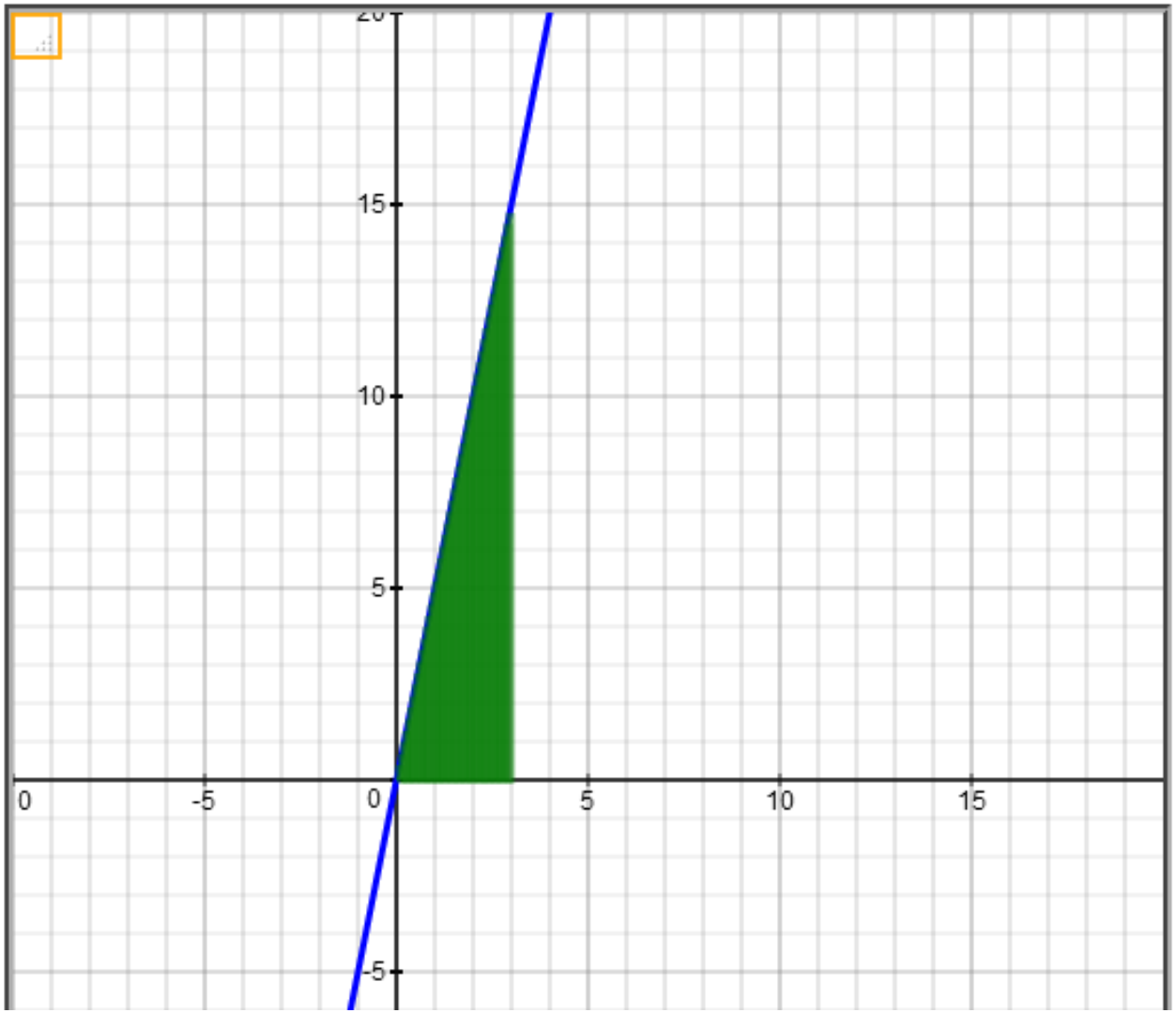
$f(x) = 5; \quad a = 0; \quad b = 4$



Draw the shaded area.

$$\text{Shaded Area} = \int_0^3 5x\,dx$$

$f(x) = 5x; \qquad a = 0; \qquad b = 3$



$$\int_{-1}^{10} (4 - |x|)dx$$

a) What is the upper limit of integration of the definite integral? 10

b) What is the lower limit of integration of the definite integral? -1

c) What is the integrand of the definite integral? $4 - |x|$

$$\int_{0}^{2} (3x^2 - 6x^3)dx$$

a) What is the upper limit of integration of the definite integral? 0

b) What is the lower limit of integration of the definite integral? 2

c) What is the integrand of the definite integral? $3x^2 - 6x^3$