

Explore integration with Living Worksheets®

INTEX03 Integrating a single term

Integration provides a way of determining the area under a line between limits. It uses the inverse procedure to differentiation. Enter different integer values for the coefficient and power of x and explore with values -5 to 5. Rounding to a maximum of 2.d.p. takes place for display purposes.

Exploration tool.

$f(x) = 3x^2$ $\int f(x) dx = \frac{3}{3}x^{2+1}$

Max Substituted is 8.00 cm²

Min Substituted is -64.00 cm²

The difference in the area between 2 and 0 and the area between 0 and -4

Sketch Area under line to y = 0 Difference is 72.00 cm² between limits

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Reminder: $y = x^n, \int y dx = \dots$

As the min. value from the max. value eliminated so do be considered. (

Accepts numbers the max and min

Areas below the displayed as neg

Sketch and values respond to variable input

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Exploration tool.

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

Max Substituted is 40.50 cm²

Min Substituted is 40.50 cm²

Some or all of this line is below y = 0 so is treated as being negative

Sketch Area under line to y = 0 Difference is 0.00 cm² between limits

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Reminder: $y = x^n, \int y dx = \dots$

As the min. value from the max. value eliminated so do be considered. (

Accepts numbers the max and min

Areas below the displayed as neg