Flipped Calculus 1 at Binghamton

Definite Integrals

Video

Video

Section 4.2 in Stewart's Calculus.

Preclass Learning Objectives:

- Definite integrals calculate the area under a function over an interval.
- Riemann Sums.
- Properties of definite integrals.

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The Fundamental Theorem of Calculus

Section 4.3 in Stewart's Calculus.

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Indefinite Integrals

Video

Section 4.4 in Stewart's Calculus.

Preclass Learning Objectives:

- An indefinite integral of a function is its general antiderivative.
- The definite integral of a rate of change is the net change.

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Integration with Substitution

Section 4.5 in Stewart's Calculus.

Preclass Learning Objectives:

- Substitution is the rule for integration which

Video

corresponds to the chain rule for differentiation.
- Introduction to integrating with substitution.

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Area

Video

Section 5.1 in Stewart's Calculus.

Preclass Learning Objectives:

- Total area between functions f and g is calculated by integrating the absolute value of the difference of f and g.

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Volume

Video

Section 5.2/5.3 in Stewart's Calculus.

Preclass Learning Objectives:

- Formula for calculating volume using cylindrical shells.
- Differences between the washer and shell methods.

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The Average Value of a Function

Video

Section 5.5 in Stewart's Calculus.

Preclass Learning Objectives:

- Average Value Formula.

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Laura Anderson and Joseph Brennan