

Lecture 25 Activity: The Fundamental Theorem of Calculus

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math.dartmouth.edu/~blogsdon/activity25.pdf

1. Calculate the following integrals. Then graph the function using a calculator and look at the graph to check if your answer is reasonable.

1.1 $\int_0^1 x^3 dx$

1.2 $\int_0^5 (2x + \cos x) dx$

1.3 $\int_{-1}^1 (2e^t + t^2) dt$

1.4 $\int_{-1}^1 (1/x^2) dx$

2. Calculate the derivatives of the following functions.

2.1 $\int_0^x (5t^2 - 4t + 3) dt$

2.2 $\int_0^{x^3} t^2 dt$

2.3 $\int_x^0 (\sin t) dt$

2.4 $\int_x^{x^2} (\sin t) dt$