

Name: _____
AP Calculus Properties of Definite Integrals Intro

Date: _____
Ms. Loughran

Find each of the following integrals.

1. $\int_2^2 (x^2 + 1)dx =$

6. $\int_2^{-1} (x^2 + 1)dx =$

11. $\int_{-2}^0 x^3 dx =$

2. $\int_{-1}^{-1} (x - 2)dx =$

7. $\int_0^2 x^2 dx =$

12. $\int_{-2}^2 x^3 dx =$

3. $\int_{-1}^1 (x^2 + 1)dx =$

8. $\int_{-2}^0 x^2 dx =$

4. $\int_1^2 (x^2 + 1)dx =$

9. $\int_{-2}^2 x^2 dx =$

5. $\int_{-1}^2 (x^2 + 1)dx =$

10. $\int_0^2 x^3 dx =$

Now see if you can answer the following questions.

1. $\int_a^a f(x)dx =$

2. Rewrite $\int_a^b f(x)dx + \int_b^c f(x)dx$ using a single integral.

3. What is the relationship between $\int_a^b f(x)dx$ and $\int_b^a f(x)dx$?

4. If $f(x)$ is an even function, fill in the following blank: $\int_{-a}^a f(x)dx = \underline{\hspace{2cm}} \int_0^a f(x)dx$

5. If $f(x)$ is an odd function, fill in the following blank: $\int_{-a}^a f(x)dx = \underline{\hspace{2cm}}$