



Problem Set 29: Properties of Integrals

For the following problems, let $\int_1^2 f(x)dx = 6$, $\int_2^5 f(x)dx = 9$, and $\int_1^5 g(x)dx = 4$

1. $\int_1^5 f(x)dx$

2. $\int_1^5 (f(x) + g(x)) dx$

3. $\int_5^1 2f(x) dx$

4. $\int_5^1 (2g(x) - 3f(x)) dx$

For the following problems, let $\int_0^5 f(x)dx = 1$, $\int_0^8 f(x)dx = 5$, and $\int_0^8 g(x)dx = -2$

5. $\int_5^8 f(x)dx$

6. $\int_8^0 -g(x)dx$

7. $\int_0^8 (f(x) - g(x)) dx$

8. $\int_8^0 f(x)g(x) dx$

AP Calculus AB – Unit 5



For any 2 functions $c(x)$ and $h(x)$, state whether the following statements are true or false.

$$9. \int (2c(x) + 9h(x)) dx = 2 \int c(x) dx + 9 \int h(x) dx$$

$$10. \int (c(x) \cdot h(x)) dx = \int c(x) dx \cdot \int h(x) dx$$

$$11. \int (h(x))^3 dx = \left(\int h(x) dx \right)^3$$

$$12. \int_0^4 c(x) dx = 2 \int_0^2 c(x) dx$$

$$13. \int_2^0 c(x) dx = - \int_0^2 c(x) dx$$