

September 19

SWBAT:

Apply the Properties of  
Definite Integrals to evaluate  
integrals.

Order of Integration	$\int_a^b f(x) dx = -\int_b^a f(x) dx$
----------------------	--

Zero	$\int_a^a f(x) dx = 0$
------	------------------------

Constant Multiple	$\int_a^b k \cdot f(x) dx = k \int_a^b f(x) dx$ For any number $k$
-------------------	--

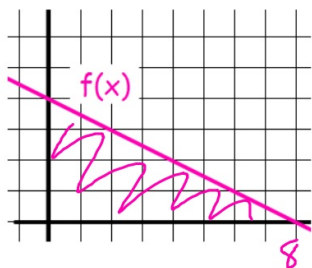
Additivity	$\int_a^b f(x) dx + \int_b^c f(x) dx = \int_a^c f(x) dx$
------------	--

Constant Multiple (special case)	$\int_a^b -f(x) dx = -\int_a^b f(x) dx$ $k = -1$
-------------------------------------	--

Sum and Difference	$\int_a^b f(x) \pm g(x) dx = \int_a^b f(x) dx \pm \int_a^b g(x) dx$
--------------------	---

Quotient Rule

Product Rule



$$\int_0^8 f(x) dx = \frac{1}{2}(8)(4) = 16$$

$$\int_0^8 5f(x) dx = 5 \int_0^8 f(x) dx = 5(16) = 80$$

$$\int_8^0 f(x) dx = - \int_0^8 f(x) dx = -16$$

$$\begin{aligned} \int_0^8 f(x) + 5 dx &= \int_0^8 f(x) dx + \int_0^8 5 dx \\ &= 16 + 40 = 56 \end{aligned}$$

