

Vocabulary/Definitions

- $\int_3^1 f(x)dx =$
- $\int_1^4 f(x)dx + \int_4^8 f(x)dx =$
- $\int_a^b f(x) + g(x)dx =$
- $\int_a^b cf(x)dx =$
- If M bounds f from above, then...
- If m bounds f from below, then...
- How can M and m be used to give limits on the size of integrals?

Understand

1. If $\int_a^b f(x)dx = 3$ and $\int_a^b g(x)dx = 7$, find $\int_b^a 3f(x) - g(x)dx$.

2. Use the Fundamental Theorem of Calculus to find $\int_1^4 3x^2dx$.

3. Find an upper and lower bound for $f(x) = x^x$ on the interval $1 \leq x \leq 3$. Give upper and lower bounds for $\int_1^3 x^x dx$.