

1. Let $f(x) = x^2 - 4x + 5$ and consider the definite integral $\frac{1}{2} \int_2^4 f(x) dx$

(a) Evaluate the integral, and call its value V

(b) Graph $y = f(x)$ and the horizontal line $y = V$ for $2 \leq x \leq 4$

(c) Evaluate the integral $\int_2^4 f(x) - V dx$

(d) Graph $y = f(x) - V$ for $2 \leq x \leq 4$

2. Repeat #1 for $f(x) = x \sin(x^2) + 5$ and $\frac{1}{3} \int_0^3 f(x) dx$