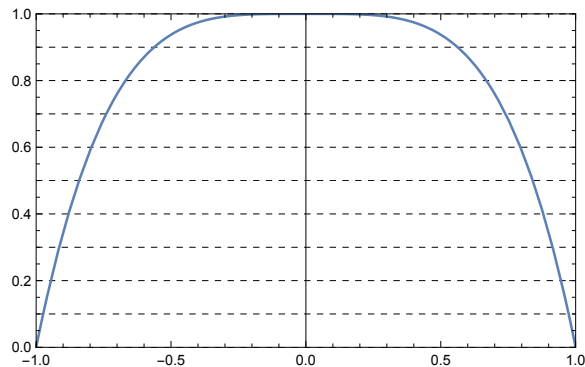# MAT 137 (Calculus II) Prof. Swift
In-class worksheet: Average Value of a Function

The graph of $y = 1 - x^4$ is shown.
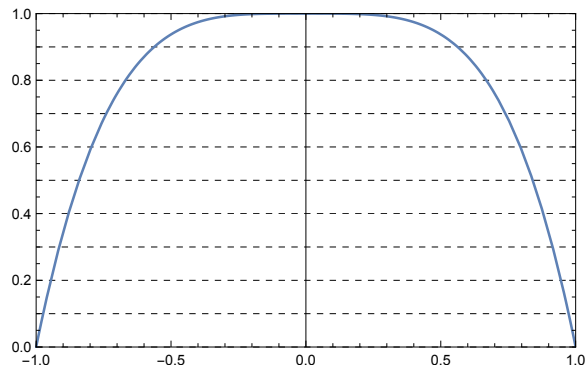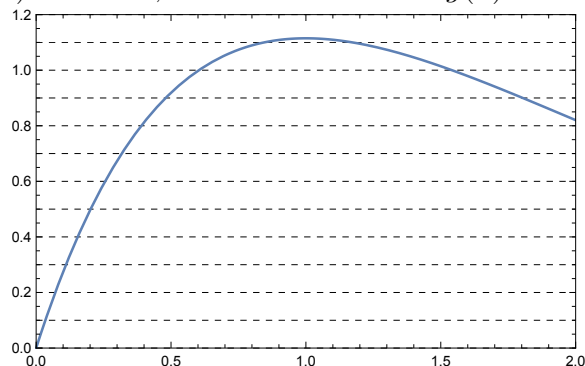

1. Compute f_{ave}, the average value of f on $[-1, 1]$.

2. Draw a horizontal line at $y = f_{ave}$. That height is the "cut-fill" height of the graph. Alternatively, the rectangle with width 2 and height f_{ave} has the same area as the area under $y = f(x)$ with $-1 \leq x \leq 1$.

The graph of $y = g(x)$ is shown, but the formula for $g(x)$ is a secret.

3. One of the horizontal dashed lines is $y = g_{ave}$, the average value of g on $[0, 2]$. You can "eyeball" that height. Draw the horizontal line $y = g_{ave}$.

4. Estimate $\int_0^2 g(x)dx$. Hint: Plug the estimated value of g_{ave} into the formula for g_{ave}, and solve for $\int_0^2 g(x)dx$
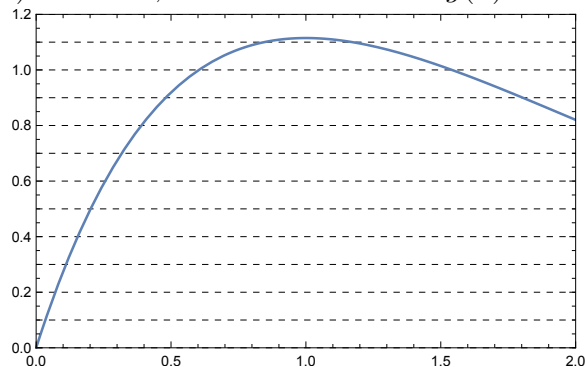
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