

TMATH 125 Quiz 3

Show *all* your work (numerically, algebraically, or geometrically) for each and simplify. No credit is given without supporting work.

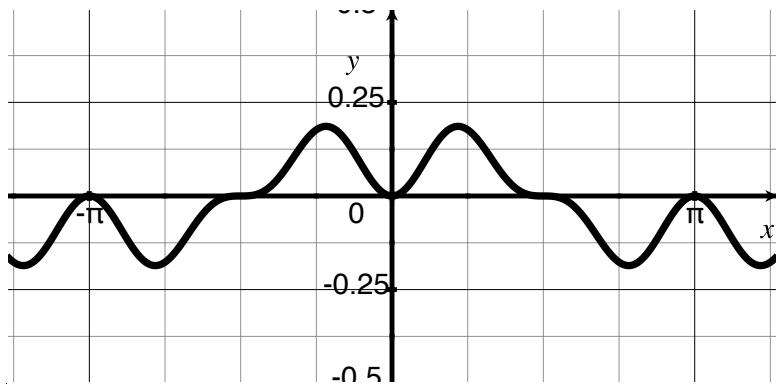
1. [3] (WebHW8#3) Find $\int_0^2 s \cdot 3^s ds$.

2. [2] (WebHW8 #7) Consider the region bounded by the curves $y = 6x^2 \ln x$ and $y = 24 \ln x$. Set up the integral (but do *not* integrate) that is used to find the this area.

3. [3] (Trig Wks #3) Find $\int \tan^6(x) \sec^4(x) dx$.

4. Consider $f(x) = \sin^2(x) \cos^3(x)$ shown on the right.

(a) [1] (§7.2 #55) Set up the integral (but do *not* find the average value of the function on the interval $[-\pi, \pi]$).



(b) [1] Use the graph and the definition of average value to find the average value of f on the interval $[-\pi, \pi]$.