

MATH 101 V2A – Homework

January 19th

The video posted on January 19th focuses on the following question:

Let

$$\begin{aligned}f(x) &= \frac{1}{(2x+1)^2}, \\g(x) &= x\sqrt{1+7x^2} + 1, \\h(x) &= xe^{x^2} + 2.\end{aligned}$$

Calculate the area from $x = 0$ to $x = 1$ between the graphs of:

1. $h(x)$ and $g(x)$.
2. $h(x)$ and $f(x)$.

In the video it is shown that $\int_0^1 h(x)dx = \frac{1}{2}(e-1) + 2$. Watch the video and use this calculation to help you solve the above problems. You do NOT have to hand anything in for this homework assignment, but you may be asked to contribute to the solution of either problem on the board. Your grade will be based primarily on participation rather than the correctness of your work, provided you demonstrate that you have watched the video.