

Math 5A worksheet - Riemann sums and Integration

Given the curve $y = x^3$ over the interval $[1,2]$,

- (a) Find and simplify an expression for R_n , the sum of the areas of the n approximating rectangles, taking x_i^* to be the right endpoint and using subintervals of equal length.
- (b) Using the formula found in part (a), find the numerical value of the approximating area for R_n with $n=8$.
- (c) Find the exact value for the area under the curve by taking $\square R_n$.
- (d) Check your results in part (c) by computing the area using integration.