Quiz 5.6 – Definite Integrals of Exponentials and Logarithms

1. (1 pt) alfredLibrary/AUCI/chapter5/lesson6/quiz/riemann10pet.pg

We want to use left-hand, right-hand, and midpoint approximations with $n = 4$ subintervals of equal width to estimate $\int_{2.25}^{6.25} e^{1.5x} dx$.

(a) The width of each subinterval is $\Delta x =$ _____.

(b) If we use a left-hand approximation, then the left-hand endpoints are _____ (as a comma-separated list).

The left-hand approximation is

$L_4 = ($ ___ $+$ ___ $+$ ___ $+$ ___ $) \cdot$ ___ $=$ _____

(c) If we use a right-hand approximation, then the right-hand endpoints are _____ (as a comma-separated list).

The right-hand approximation is

$R_4 = ($ ___ $+$ ___ $+$ ___ $+$ ___ $) \cdot$ ___ $=$ _____

(d) If we use a midpoint approximation, then the midpoints are _____ (as a comma-separated list).

The midpoint approximation is

$M_4 = ($ ___ $+$ ___ $+$ ___ $+$ ___ $) \cdot$ ___ $=$ _____

(e) Use the Fundamental Theorem to find the exact area and compare your answer to the approximations that you found above.

$\int_{2.25}^{6.25} e^{1.5x} dx =$ _____