

5.73

Quiz 7

1.

$$\int_{x_-(E)}^{x_+(E)} p_E(x') dx' = \frac{h}{2}(n+1/2)$$
$$p_E(x) = [2m(E - V(x))]^{1/2}$$

Even though the WKB quantization cannot be exact for potentials of the form

- I. $V(x) = 0$ $|x| \leq L/2$
 $V(x) = \infty$ $|x| > L/2$
- II. $V(x) = (2A/L)x$ $|x| \leq L/2$
 $V(x) = \infty$ $|x| > L/2$

- A. Evaluate the quantization integral for potentials I and II at $E = A$.
- B. Which potential supports more bound energy levels at $E \leq A$?
- C. For the $V(x) = \infty$ for $|x| > L/2$ potentials in this example, does the WKB quantization integral over-estimate or under-estimate the true number of bound levels at $E \leq A$? Suggest a reason in support of your answer.

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