Name

5.73

Quiz 7

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1.

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

$$p_E(x) = \left[2m(E - V(x))\right]^{1/2}$$

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

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

A. Evaluate the quantization integral for potentials I and II at E = A.

B. Which potential supports more bound energy levels at E ≤ A?

C. For the V(x) = ∞ 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 ≤ A? Suggest a reason in support of your answer.