## 6-23

Sketch (a) the wave function and (b) the probability distribution for the n=4 state for the finite square well potential.

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## 6-28

Compute the expectation value of the x component of the momentum of a particle of mass $m$ in the $n = 3$ level of a one-dimensional infinite infinite square well of width $L$. Reconcile your answer with the fact that the kinetic energy of the particle in this level is $9\pi^2\hbar^2/2mL^2$

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## 6-29

Find (a) $\langle x \rangle$ and (b) $\langle x^2 \rangle$ for the second excited state (n=3) in a ninfinite square well potential.

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## 6-32

Find $\sigma_x = \sqrt{\langle x^2 \rangle - \langle x \rangle^2}, \sigma_p = \sqrt{\langle p^2 \rangle - \langle p \rangle^2}$ and $\sigma_x \sigma_p$ for the ground-state wave function of an infinite square well. Use the fact that $\langle p \rangle = 0$ by symmetry and $\langle p^2 \rangle = \langle 2mE \rangle$ from problem 6-31