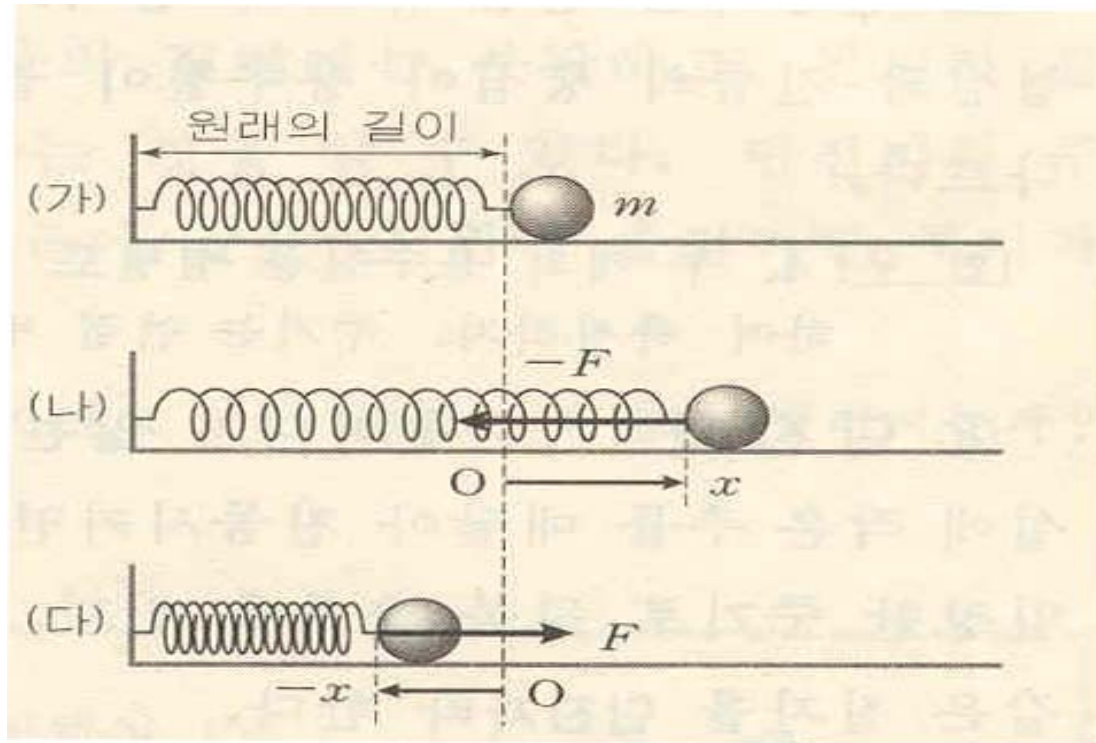


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Fig. 6-8, p. 203



조화진동자 (Harmonic Oscillator)



$$H = \frac{p^2}{2m} + \frac{m\omega^2 x^2}{2}$$

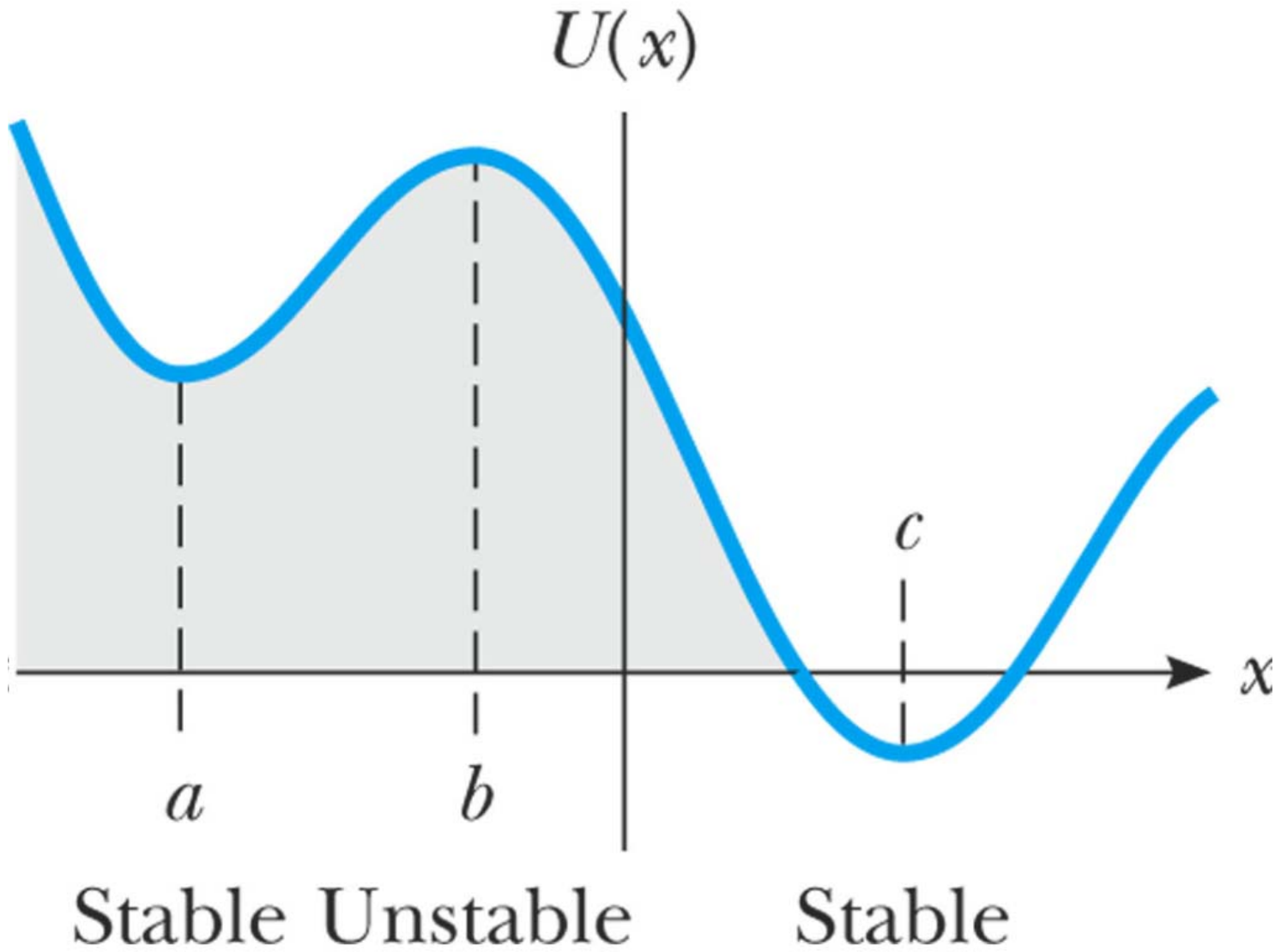
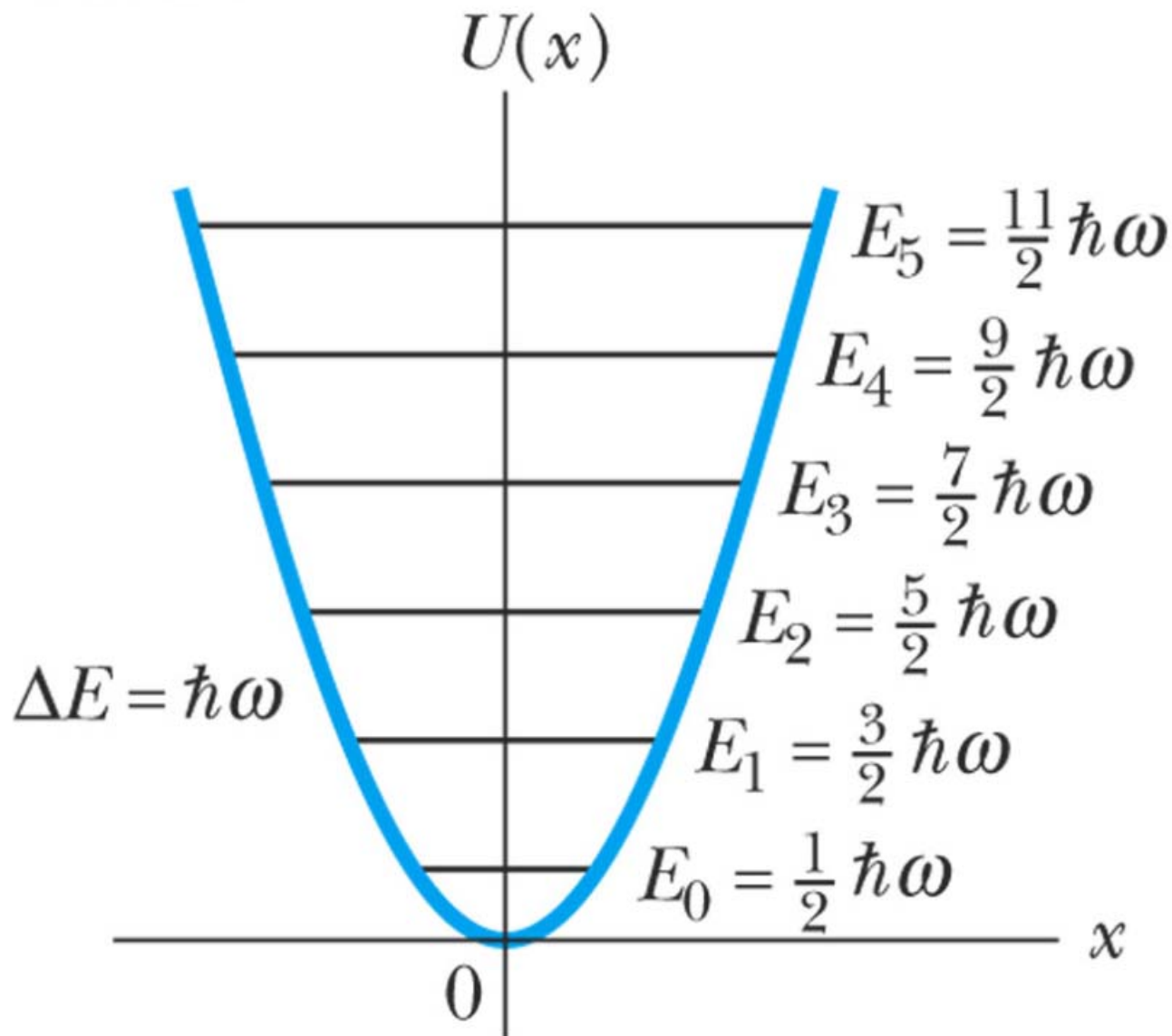
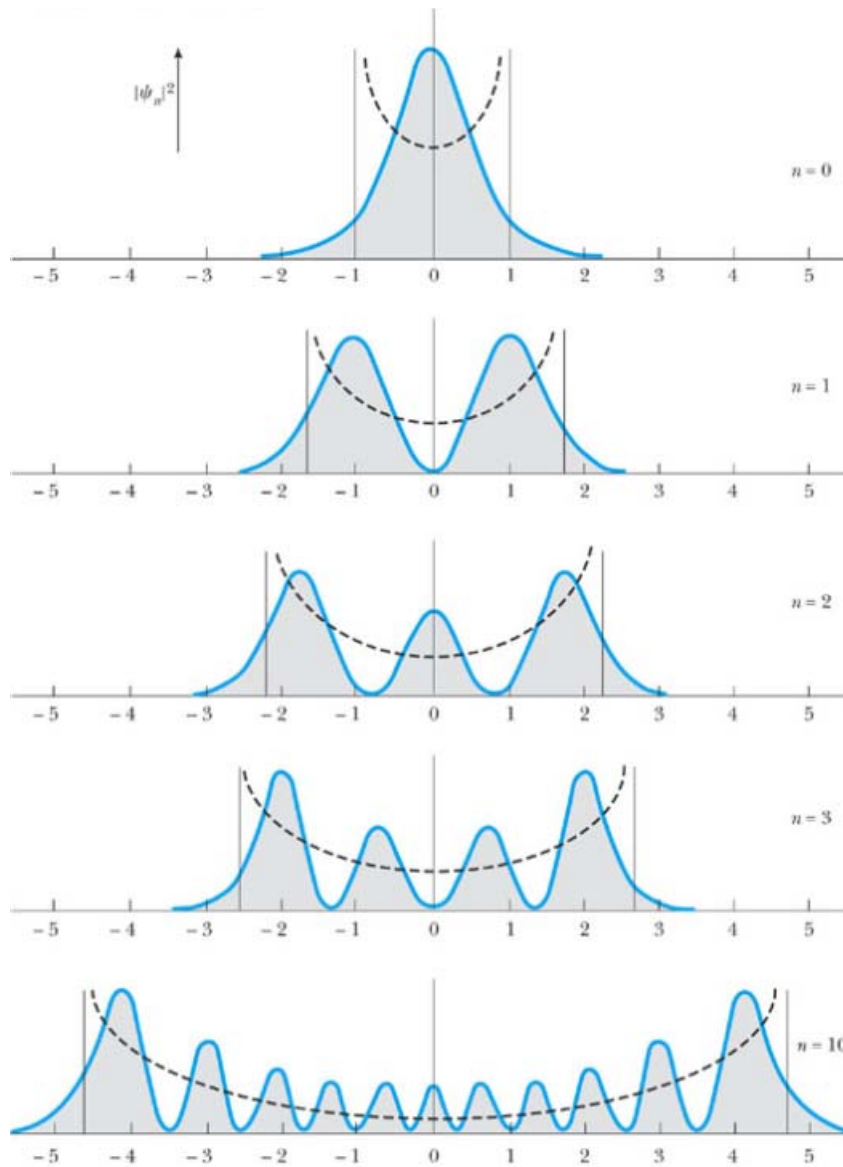


Fig. 6-17, p. 212

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Fig. 6-20, p. 216



Table 6.2 Common Observables and Associated Operators

Observable	Symbol	Associated Operator
Position	x	x
Momentum	p	$\frac{\hbar}{i} \frac{\partial}{\partial x}$
Potential energy	U	$U(x)$
Kinetic energy	K	$-\frac{\hbar^2}{2m} \frac{\partial^2}{\partial x^2}$
Hamiltonian	H	$-\frac{\hbar^2}{2m} \frac{\partial^2}{\partial x^2} + U(x)$
Total energy	E	$i\hbar \frac{\partial}{\partial t}$

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Operators and Observables

모든 물리량에는 해당하는 Hermitian Operator가 있고 그 고유치(eigenvalue)는 실수이며, 그 물리량을 측정할 때 측정될 수 있는 값들은 그 고유치들이다.

기대치 $\langle Q \rangle = \int_{-\infty}^{\infty} \Psi^* \hat{Q} \Psi dx$

