Answers to selected questions

Chapter 6

Q6. No. The force exerted by the string is perpendicular to the motion of the ball so it does no work.

Q12. No. The work done by the net force (the string tension minus the frictional force) equals the change in kinetic energy.

Q18. Yes. The potential energy increases because the center of the crate has been raised.

Q24. No, to both questions. The total mechanical energy is slowly reduced by the negative work done by the air resistance force.

Q30. Yes. The push adds kinetic energy thus increasing the total energy. If frictional losses are not too large, the sled could have enough energy to cross a higher hump on the hill.