

## Answers to selected questions

### Chapter 4

**Q6.** The larger mass will have a smaller acceleration. The acceleration is equal to the net force divided by the mass,  $F/m$ , so a larger mass results in a smaller acceleration for the same force.

**Q12.** Yes. A net force in the direction opposite to the velocity is required to produce a negative acceleration (or deceleration).

**Q18.** No. Mass has no direction and therefore is not a vector.

**Q24.** There is a horizontal frictional force exerted by the tablecloth on the objects, but this force may be small and acts for a very short time. Once the tablecloth is no longer in contact with the objects, the frictional force exerted by the table on the objects quickly decelerates them.

**Q30. a.** No. There is a non-zero net force, so the blocks will be accelerated.

**b.** The tension in the string must be less than the force  $F$  so that the net force acting on the first block will be in the forward direction.