

Solutions

Each answer shows the steps, then the **result**.

2.1

- zero — constant velocity means the forces are balanced

2.2

- friction = 7.0 N (it matches the push up to its maximum); the box does not move, since $7.0 < 12$ N

2.3

- The passengers have inertia, so they tend to keep moving forward at the original speed while the bus slows beneath them

3.1 B

3.2 C

3.3

(a)

- 500 N

(b)

- zero — at rest is equilibrium, so the net force must be zero by the first law