

## Solutions

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

### 2.1

- $p = mv = 0.50 \times 8.0 = 4.0 \text{ kg m s}^{-1}$

### 2.2

- $v = \frac{p}{m} = \frac{18\,000}{1200} = 15 \text{ m s}^{-1}$

### 2.3

- $p = (3.0)(+2.0) + (1.0)(-4.0) = +6.0 - 4.0 = +2.0 \text{ kg m s}^{-1}$

### 3.1 B

### 3.2 B

- for equal  $mv$ , larger  $m$  means smaller  $v$

### 3.3

(a)

- $p_i = 0.16 \times (+5.0) = +0.80 \text{ kg m s}^{-1}$

(b)

- $p_f = 0.16 \times (-3.0) = -0.48 \text{ kg m s}^{-1}$

(c)

- $\Delta p = -0.48 - 0.80 = -1.28 \text{ kg m s}^{-1}$