

- 8** A resultant force causes a body to accelerate.

What is equal to the resultant force?

- A** the acceleration of the body per unit mass
  - B** the change in kinetic energy of the body per unit time
  - C** the change in momentum of the body per unit time
  - D** the change in velocity of the body per unit time
- 9** A ship of mass  $8.4 \times 10^7 \text{ kg}$  is approaching a harbour with speed  $16.4 \text{ ms}^{-1}$ . By using reverse thrust it can maintain a constant total stopping force of  $920\,000 \text{ N}$ .

How long will it take to stop?

- A** 15 seconds
  - B** 150 seconds
  - C** 25 minutes
  - D** 250 minutes
- 10** A tractor of mass  $1000 \text{ kg}$  is connected by a tow-bar to a trailer of mass  $1000 \text{ kg}$ . The total resistance to motion has a constant value of  $4000 \text{ N}$ . One quarter of this resistance acts on the trailer.

When the tractor and trailer are moving along horizontal ground at a constant speed of  $6 \text{ ms}^{-1}$ , what is the force exerted on the tractor by the tow-bar?

- A** 0 N                      **B** 1000 N                      **C** 3000 N                      **D** 4000 N

**Space for working**