

**10** A force  $F$  is applied to a freely moving object. At one instant of time, the object has velocity  $v$  and acceleration  $a$ .

Which quantities **must** be in the same direction?

- A**  $a$  and  $v$  only
- B**  $a$  and  $F$  only
- C**  $v$  and  $F$  only
- D**  $v$ ,  $F$  and  $a$

**11** The momentum of an object changes from  $160\text{ kg m s}^{-1}$  to  $240\text{ kg m s}^{-1}$  in 2 s.