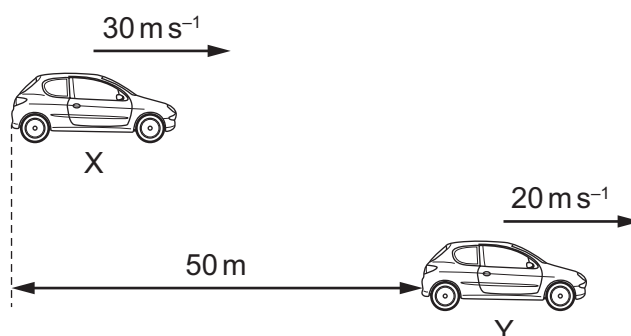


- 7 Two cars X and Y are positioned as shown at time  $t = 0$ .

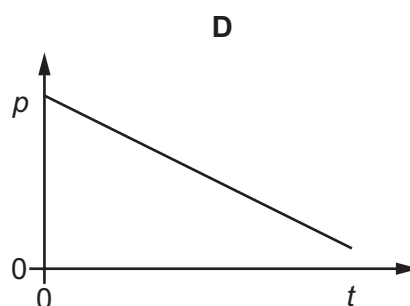
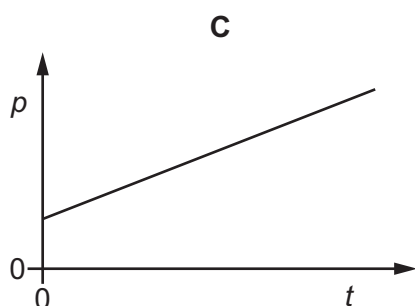
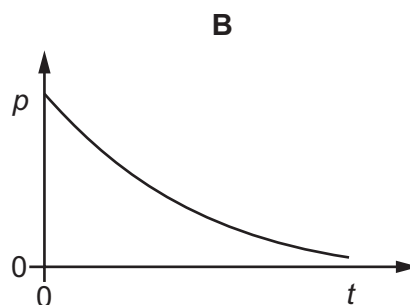
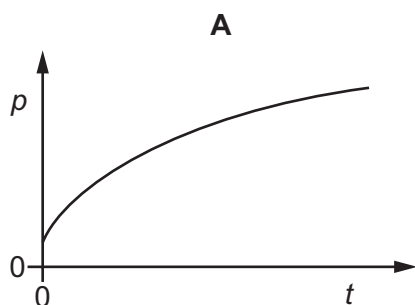
They are travelling in the same direction.

X is 50 m behind Y and has a constant velocity of  $30 \text{ m s}^{-1}$ . Y has a constant velocity of  $20 \text{ m s}^{-1}$ .



What is the value of  $t$  when X is level with Y?

- A** 1.0 s      **B** 1.7 s      **C** 2.5 s      **D** 5.0 s
- 8 A constant resultant force acts on an object in the direction of the object's velocity.
- Which graph could show the variation with time  $t$  of the momentum  $p$  of the object?



- 9 Which statement **must** be true for an object in a gravitational field?
- A** If the object has mass then the field causes it to accelerate.
- B** If the object has mass then the field causes it to have weight.
- C** If the object has weight then the field causes it to accelerate.
- D** If the object has weight then the field causes it to have mass.