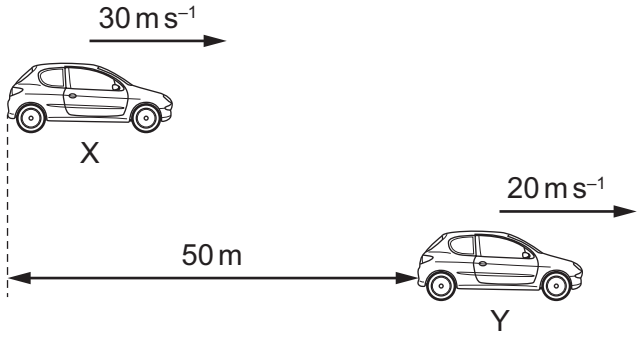
7 Two cars X and Y are positioned as shown at time $t = 0$.

They are travelling in the same direction.

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



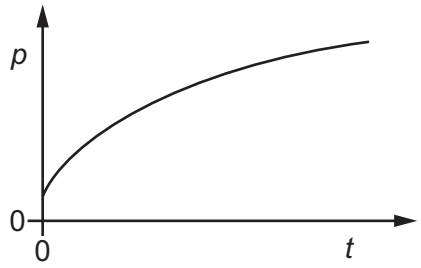
What is the value of t when X is level with Y?

A 1.0 s **B** 1.7 s **C** 2.5 s **D** 5.0 s

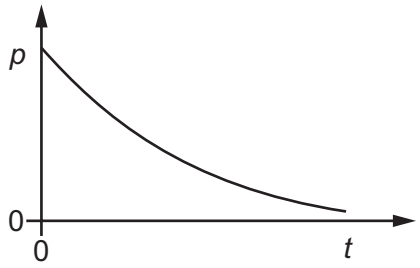
8 A constant resultant force acts on an object in the direction of the object's velocity.

Which graph could show the variation with time t of the momentum p of the object?

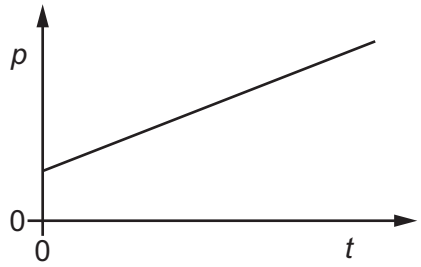
A



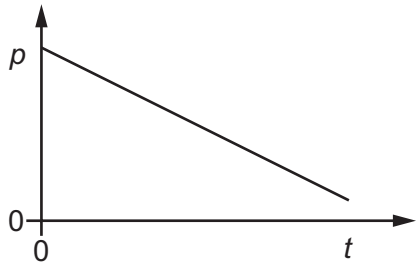
B



C



D



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.