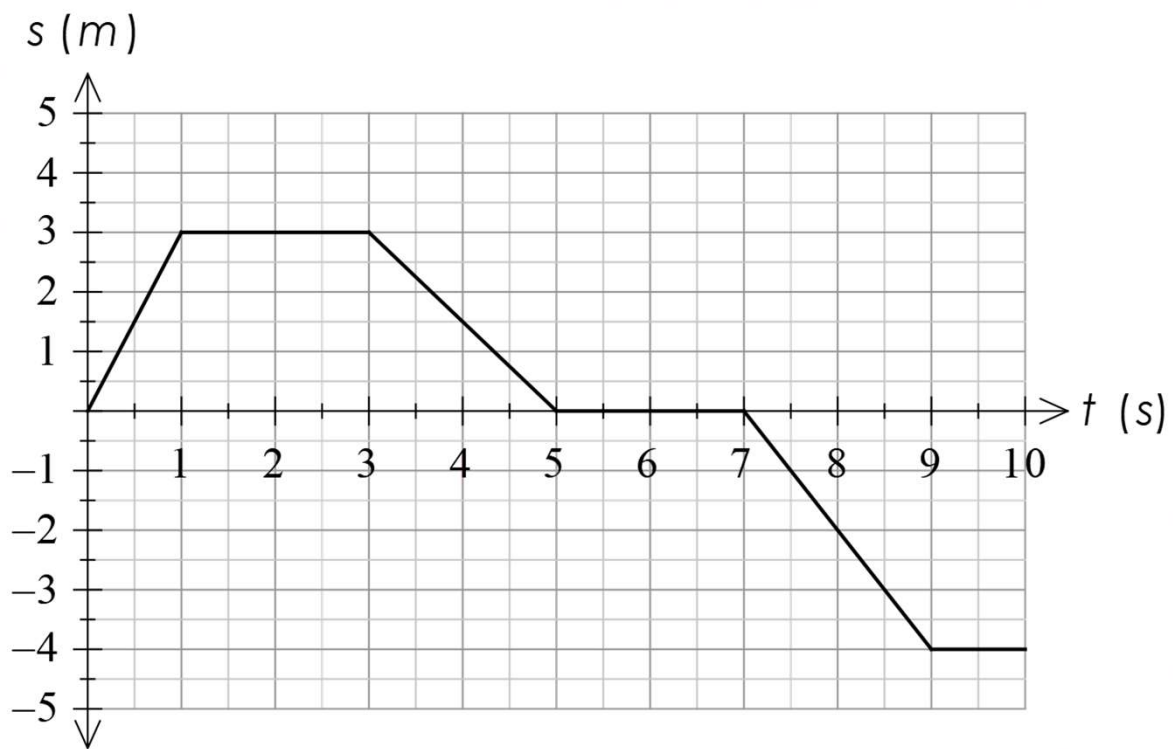


DISPLACEMENT AND DISTANCE GRAPHS

Graphing Motion

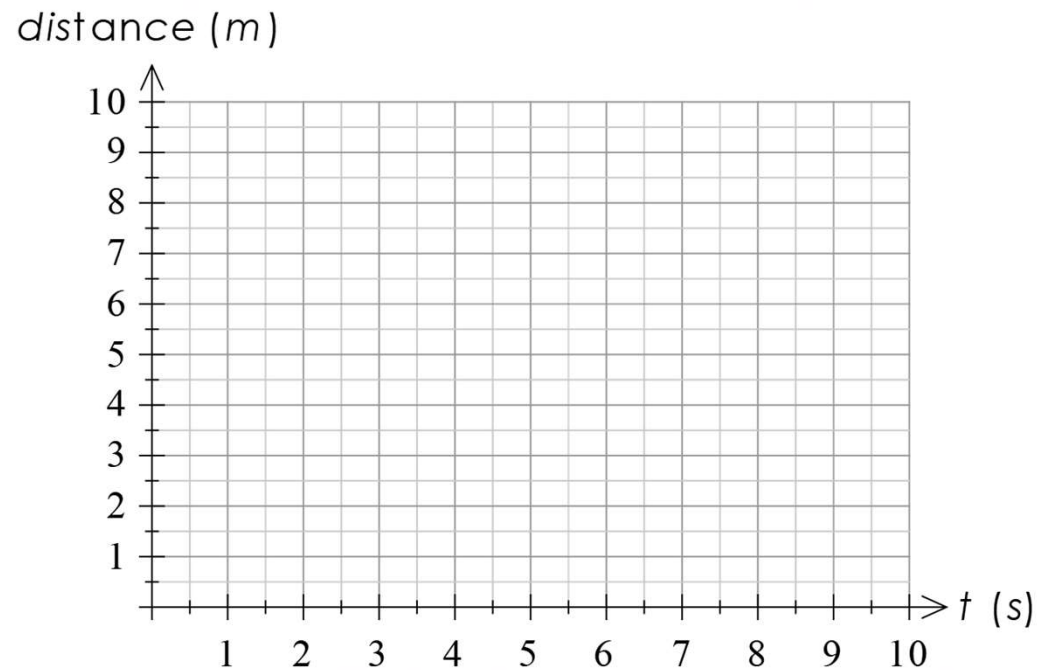
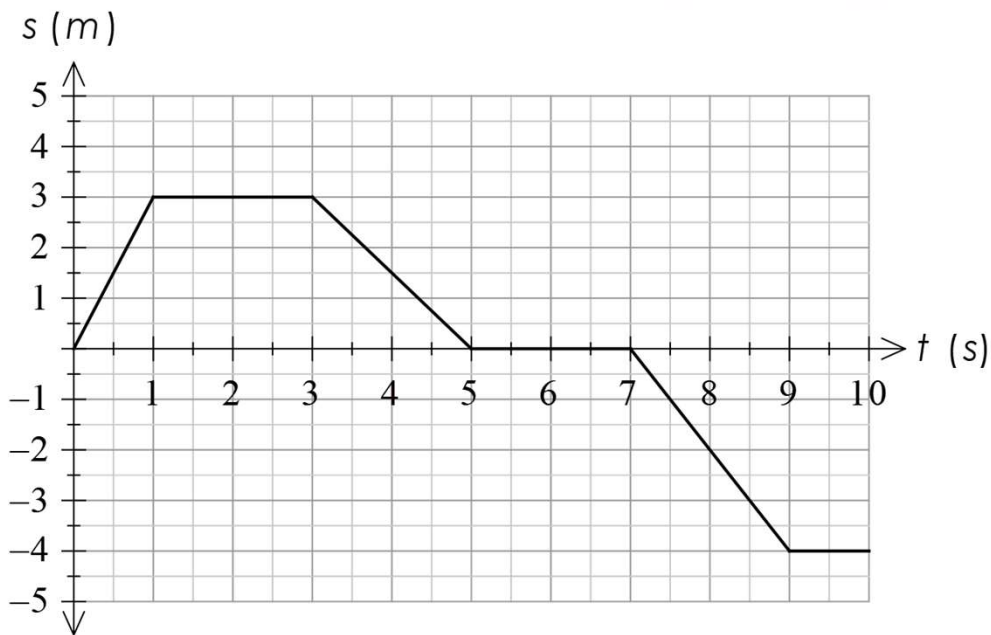
DISPLACEMENT – TIME GRAPHS

Displacement-time graphs show the displacement as a function of time.

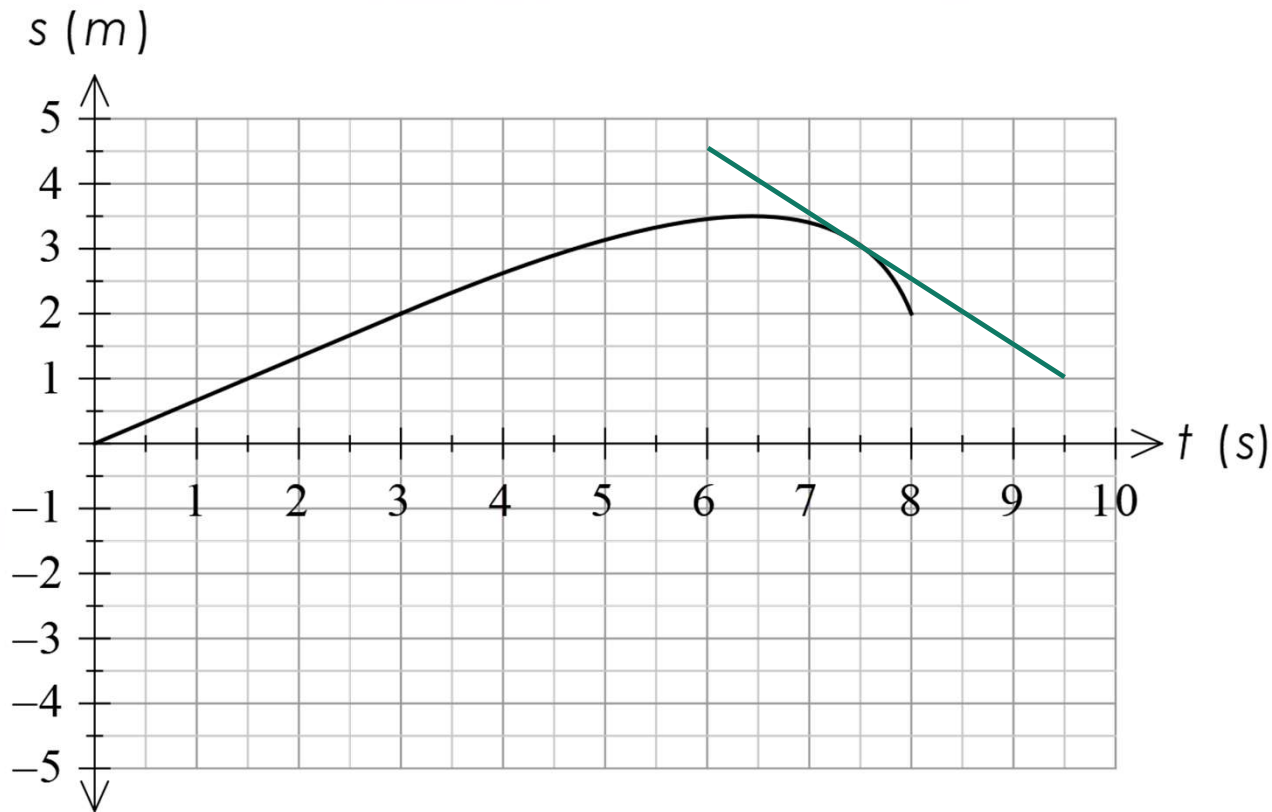


DISTANCE-TIME GRAPHS

Distance graphs show the distance as a function of time. Displacement-time graphs can be converted into distance-time graphs by considering every change in displacement is adding to the distance.



GRADIENT OF DISPLACEMENT-TIME GRAPHS GIVES VELOCITY



Velocity at $t = 2$ s

Velocity at $t = 7.5$ s

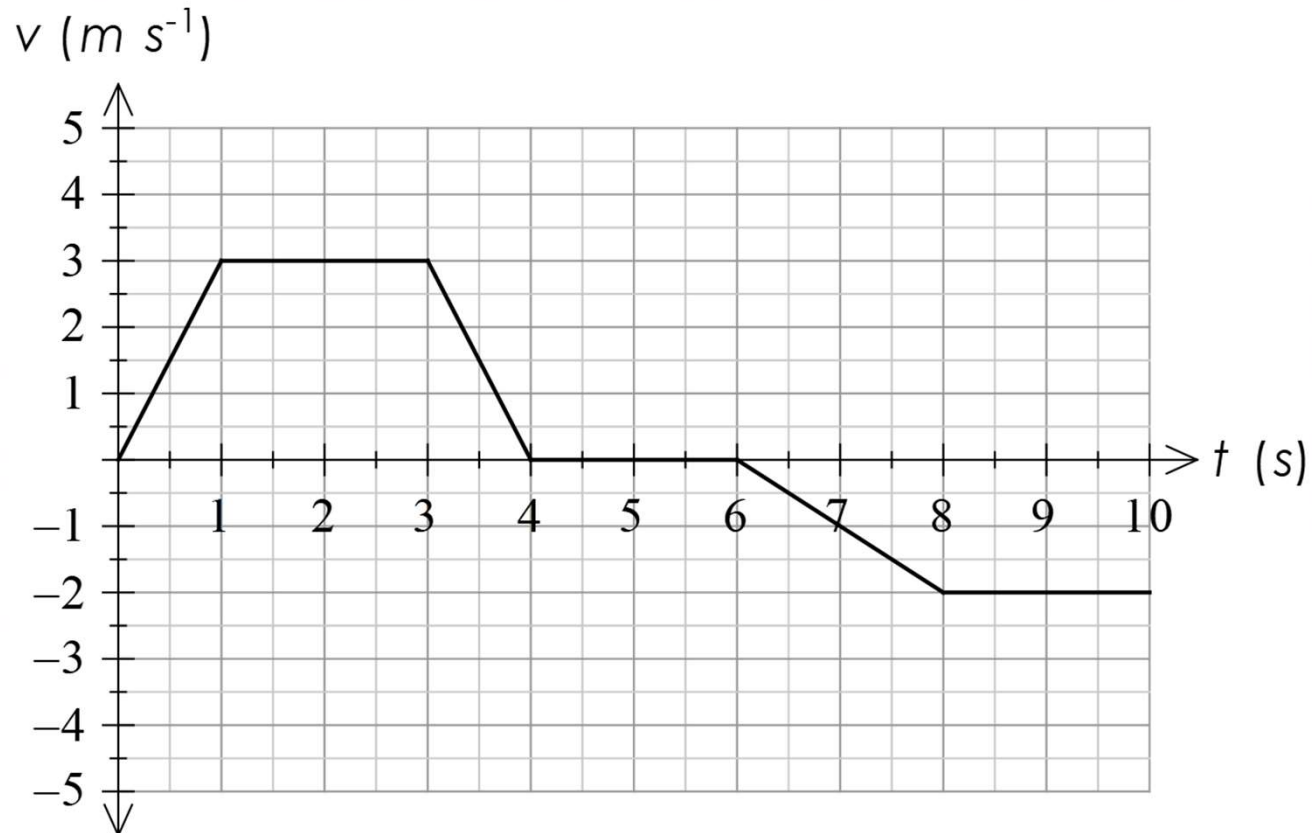
Average velocity after 7.5 s

VELOCITY GRAPHS

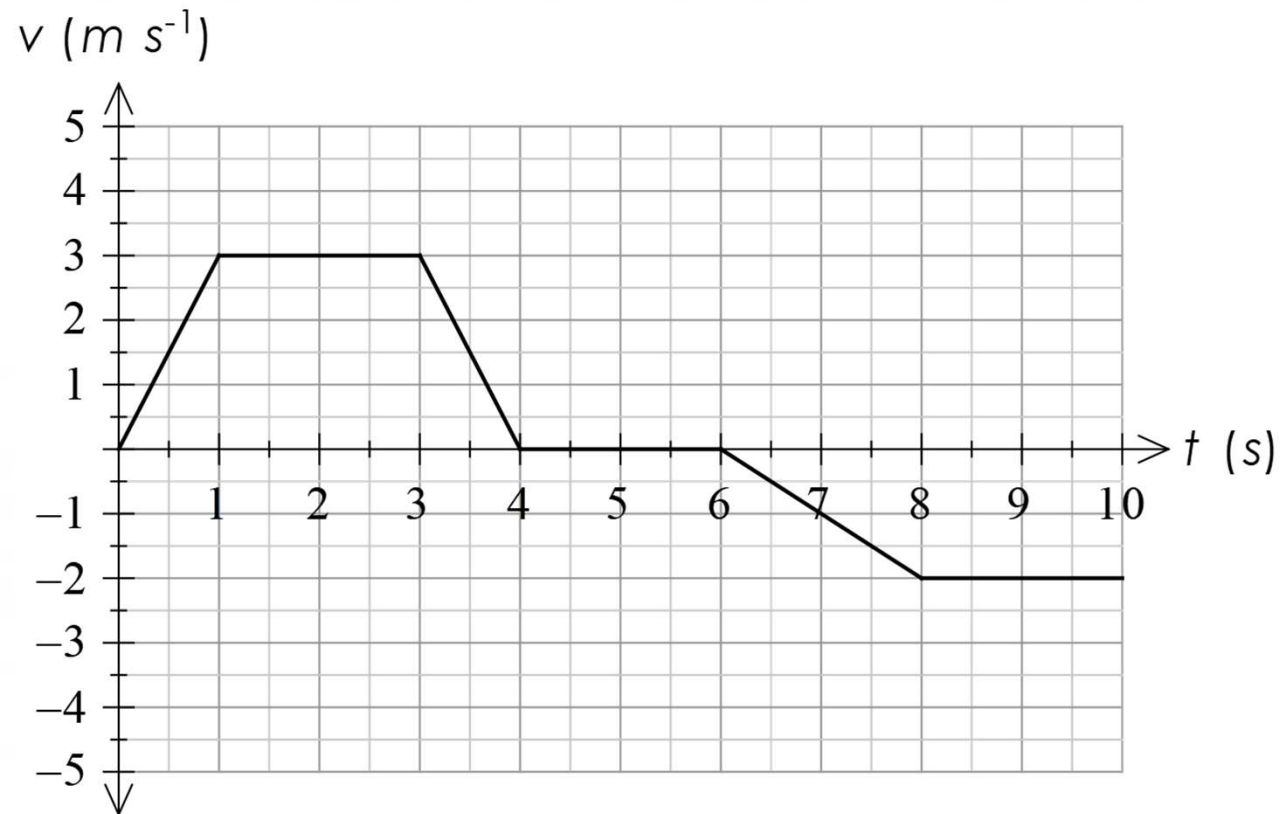
Graphing Motion

VELOCITY – TIME GRAPHS

Velocity-time graphs show the velocity as a function of time.



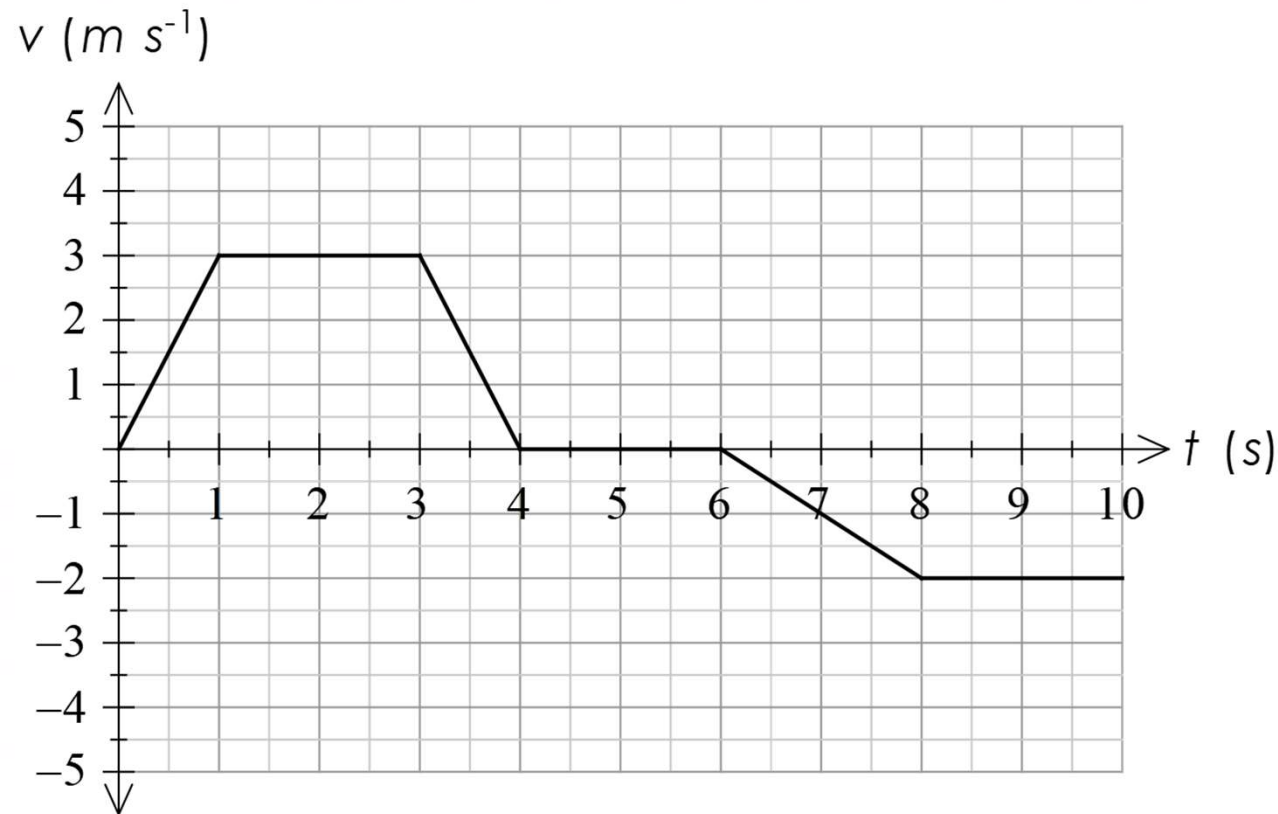
GRADIENT OF VELOCITY-TIME GRAPHS GIVES ACCELERATION



Acceleration at $t = 0.5 s$

Acceleration at $t = 7.0 s$

AREA OF VELOCITY-TIME GRAPHS GIVES CHANGES IN DISPLACEMENT



Change in displacement from $0 < t < 4\ s$

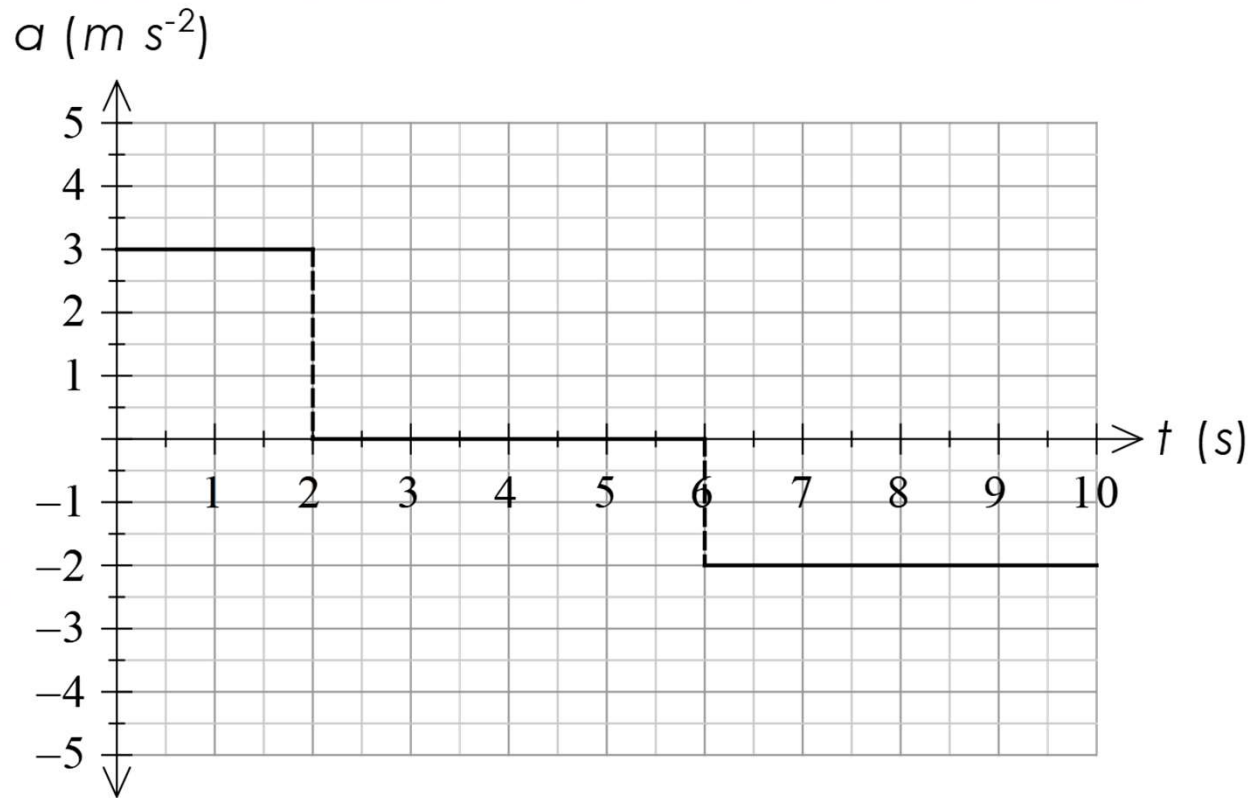
Final displacement after $10\ s$ if starting from the origin.

ACCELERATION GRAPHS

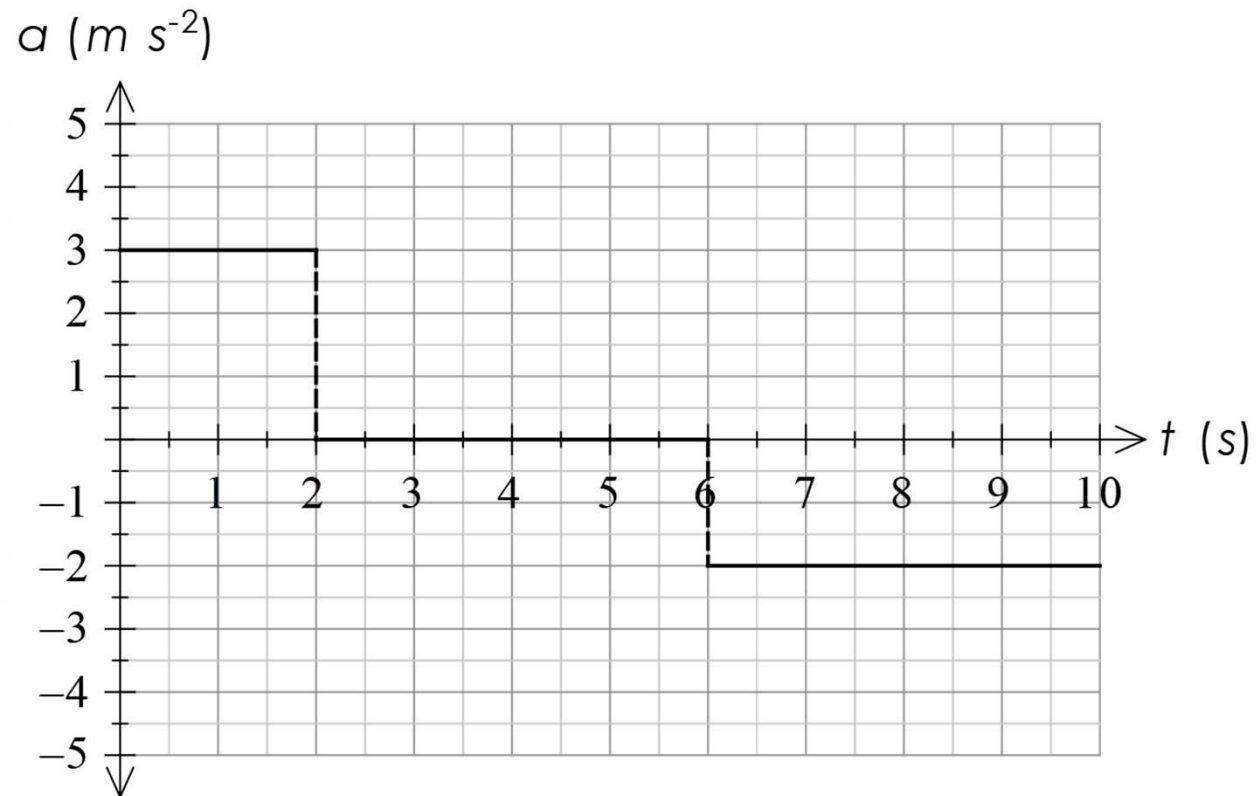
Graphing Motion

ACCELERATION – TIME GRAPHS

Acceleration-time graphs show the acceleration as a function of time.



AREA OF ACCELERATION-TIME GRAPHS GIVES CHANGES IN VELOCITY



Change in velocity from $0 < t < 2 \text{ s}$

Final velocity after 10 s if initially moving at 2.0 m s^{-1} at $t = 0$.

SUMMARY OF GRAPH TYPES

