Draw a Position-Time Graph from a Velocity-Time Graph

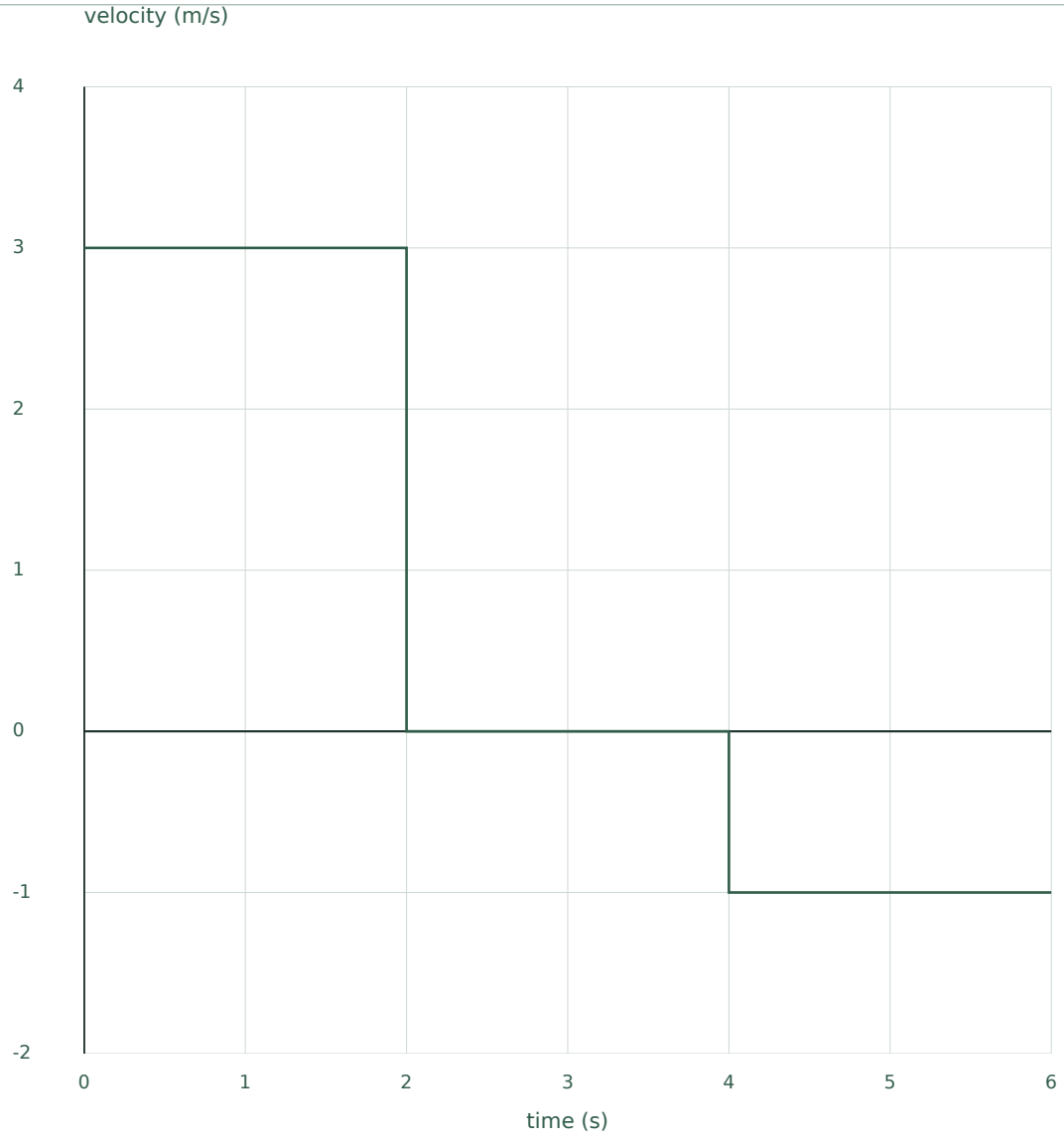
Original worked example / unchanged complete key

Prompt: A velocity-time graph shows: from 0 to 2 seconds, velocity 3 metres per second; from 2 to 4 seconds, velocity 0 metres per second; from 4 to 6 seconds, velocity negative 1 metre per second. Start at position 0 metres. Draw the position-time curve.

Answer: Segment 1: displacement 3 times 2 equals 6 metres; position goes from 0 to 6 metres. Segment 2: displacement 0 times 2 equals 0 metres; position stays at 6 metres. Segment 3: displacement negative 1 times 2 equals negative 2 metres; position goes from 6 to 4 metres. The position-time curve rises from 0 to 6 metres over 0 to 2 seconds, is horizontal at 6 metres from 2 to 4 seconds, then slopes downward to 4 metres from 4 to 6 seconds.

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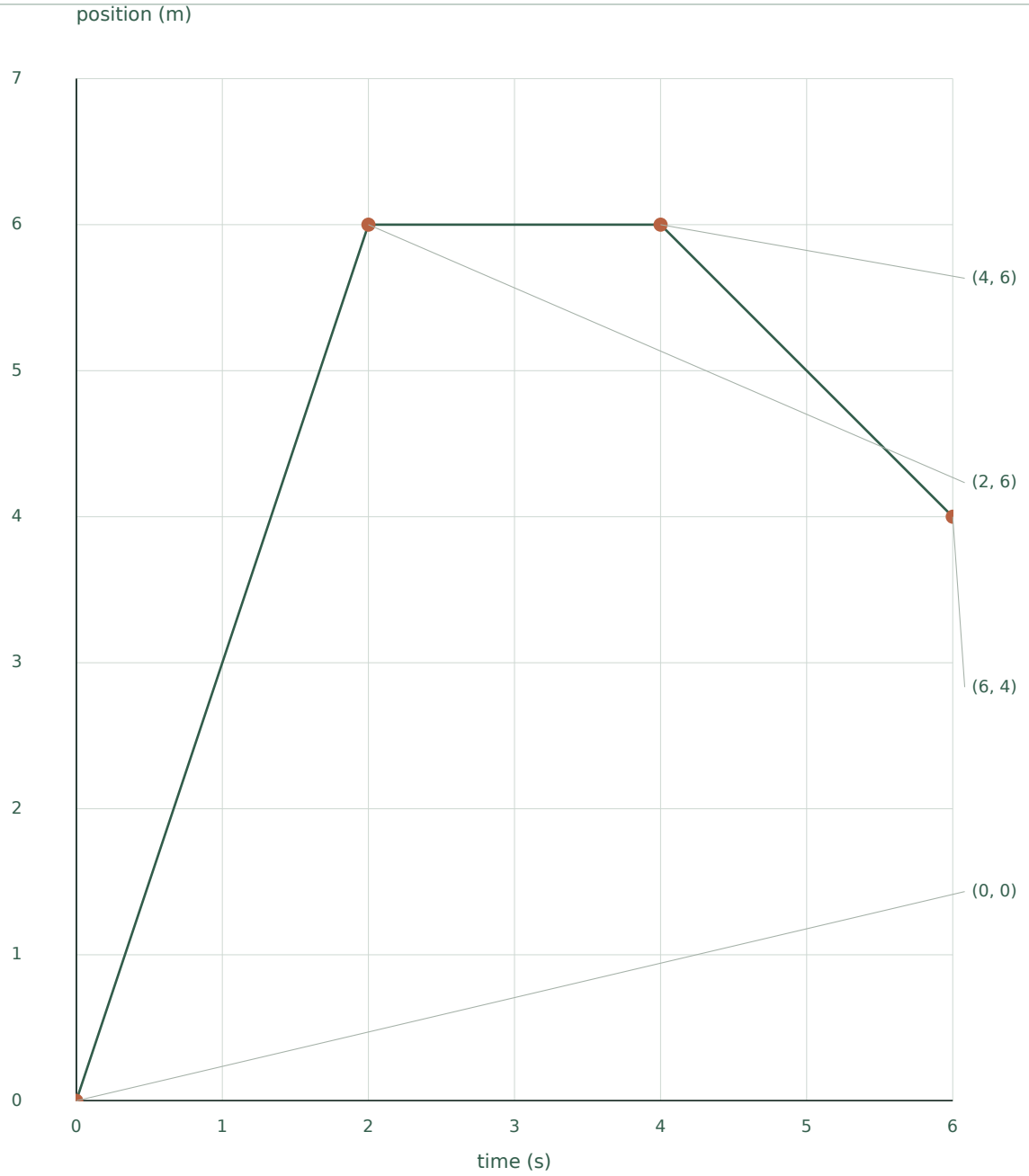
Velocity-time graph (given)



Given velocity-time graph from the prompt; no position-time solution shown.

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Position-time curve (reference answer)



Reference position-time curve: rises 0 to 6 m over 0-2 s, horizontal at 6 m from 2-4 s, slopes down to 4 m from 4-6 s. Coordinate labels sit outside the plot; thin grey leaders are annotations, not function curves.