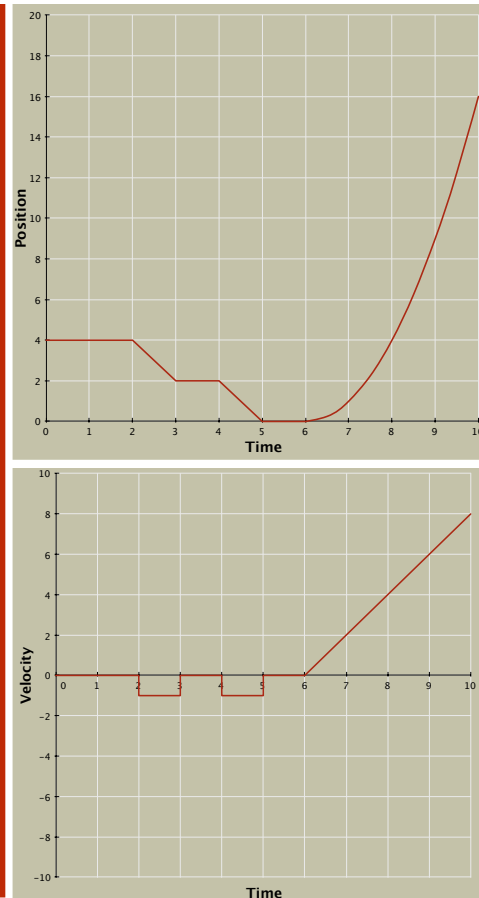


# Motion Graphs

Kinematics Unit



## Worksheets for Kinematics (Solutions)

By Robert Prior

Using motion graphs is an important skill. These worksheets provide students with practice interpreting and drawing motion graphs.

Expectations	
A1.12	use appropriate graphic modes of representation for qualitative and quantitative data
B2.2	analyse and interpret position-time, velocity-time, and acceleration-time graphs of motion in one dimension

### Inside

#### Simple Motion, Multiple Choice 2

Position-time and velocity-time graphs of either constant velocity or constant acceleration. Students choose the best description from a list.

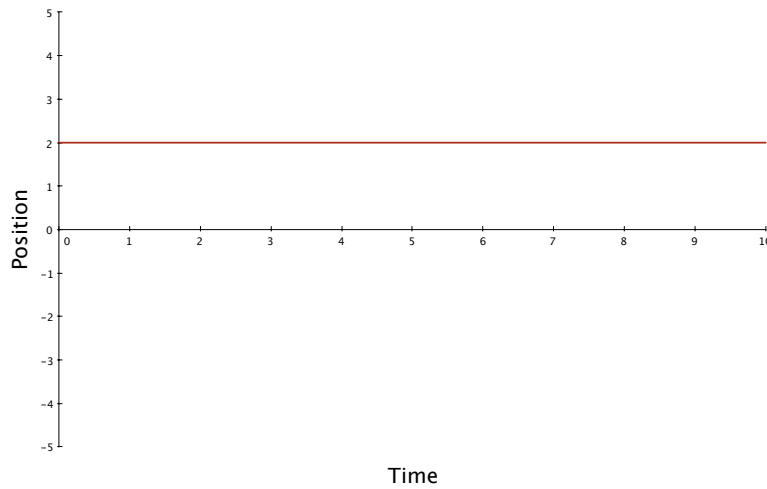
#### Describing Motion 6

Position-time and velocity-time graphs for simple and slightly-less-simple motion. Students write a short description using proper vocabulary.

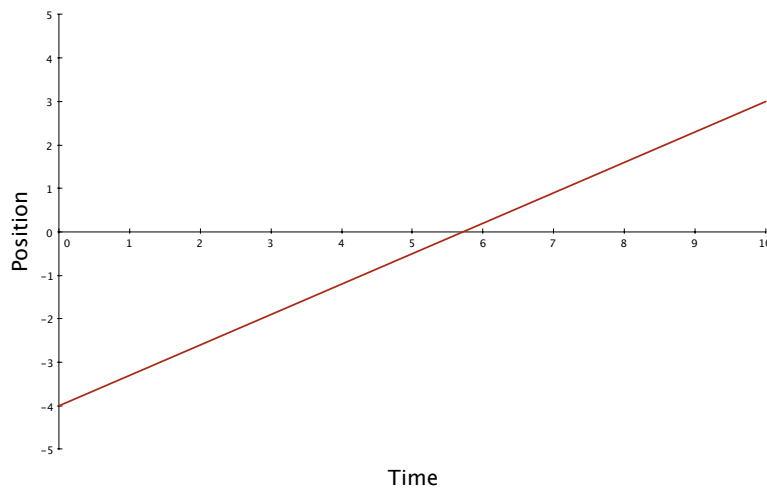
#### Sketching Motion Graphs 10

Students are given a position-time, velocity-time, or acceleration-time graph for simple or complex motion. They must sketch the missing graphs.

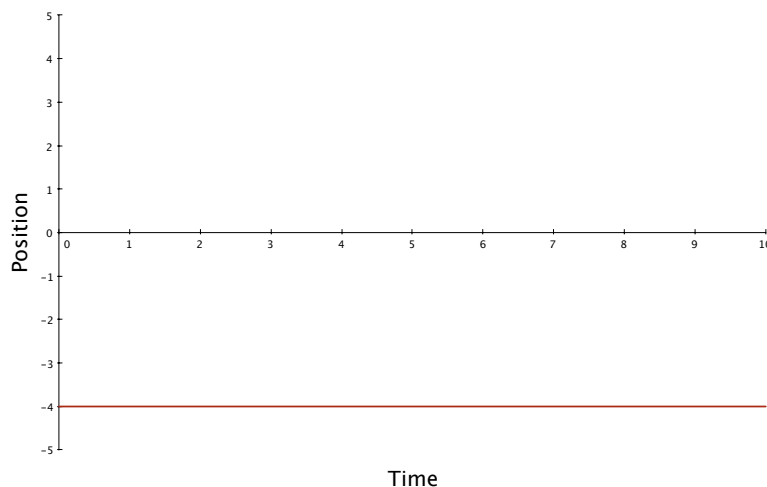
**Determine the motion shown by the following graphs.** Select the best term from the list.



- ☒ at rest
- ☐ constant positive velocity
- ☐ constant negative velocity
- ☐ constant positive acceleration
- ☐ constant negative acceleration

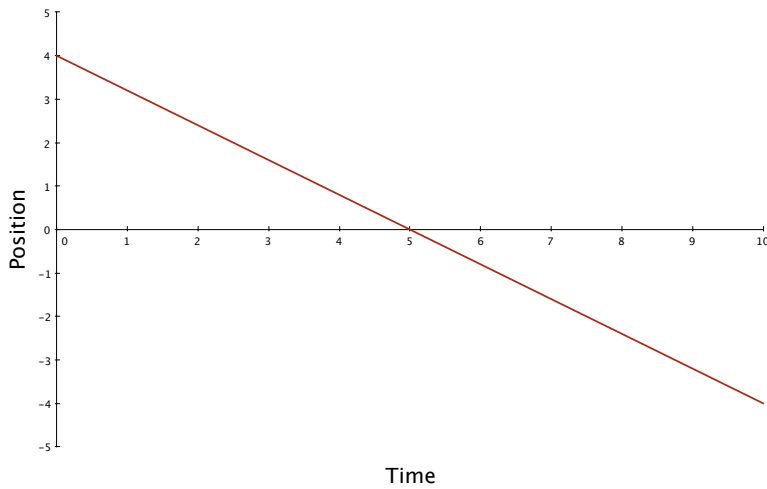


- ☐ at rest
- ☒ constant positive velocity
- ☐ constant negative velocity
- ☐ constant positive acceleration
- ☐ constant negative acceleration

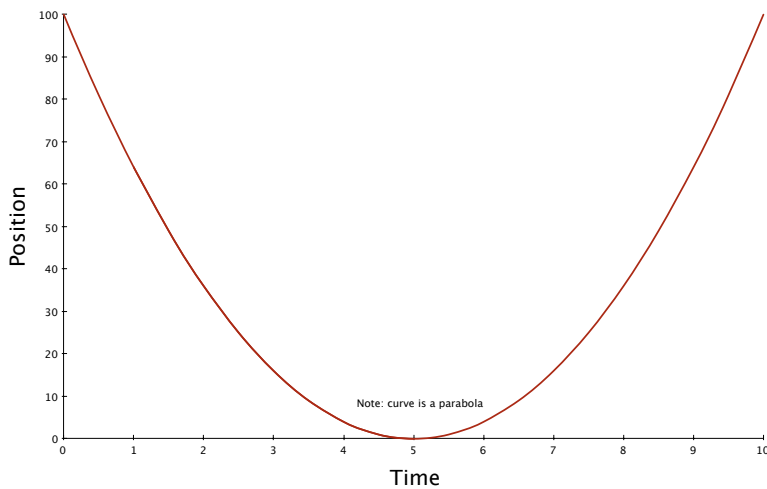


- ☒ at rest
- ☐ constant positive velocity
- ☐ constant negative velocity
- ☐ constant positive acceleration
- ☐ constant negative acceleration

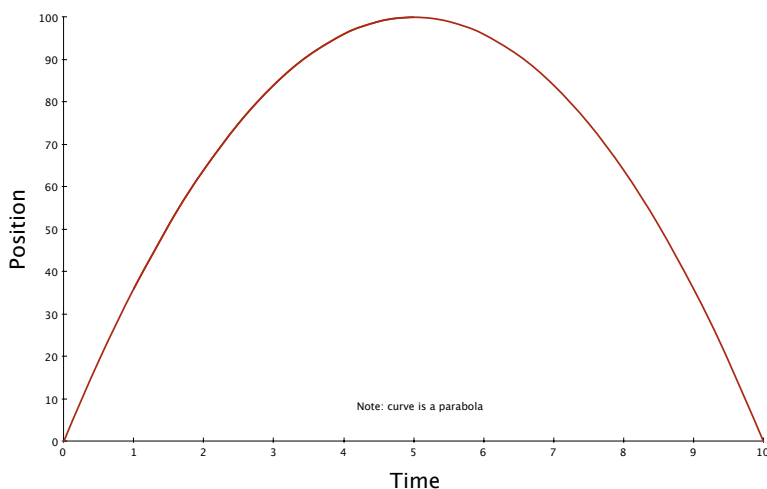
**Determine the motion shown by the following graphs.** Select the best term from the list.



- ☐ at rest
- ☐ constant positive velocity
- ☒ constant negative velocity
- ☐ constant positive acceleration
- ☐ constant negative acceleration

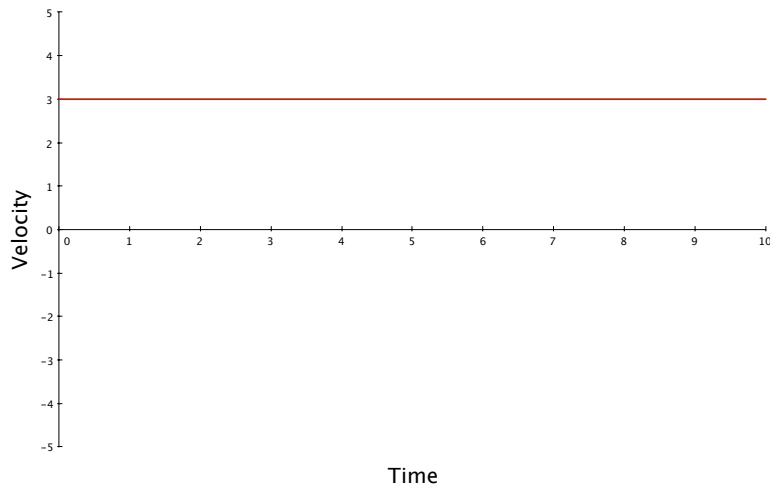


- ☐ at rest
- ☐ constant positive velocity
- ☐ constant negative velocity
- ☒ constant positive acceleration
- ☐ constant negative acceleration

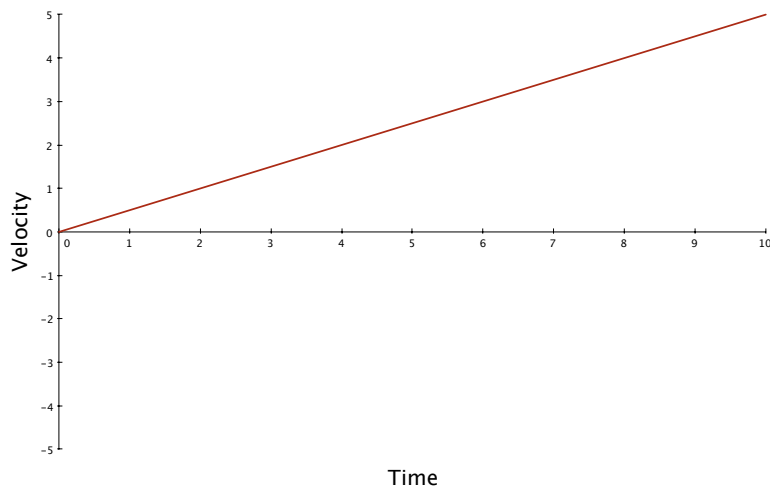


- ☐ at rest
- ☐ constant positive velocity
- ☐ constant negative velocity
- ☐ constant positive acceleration
- ☒ constant negative acceleration

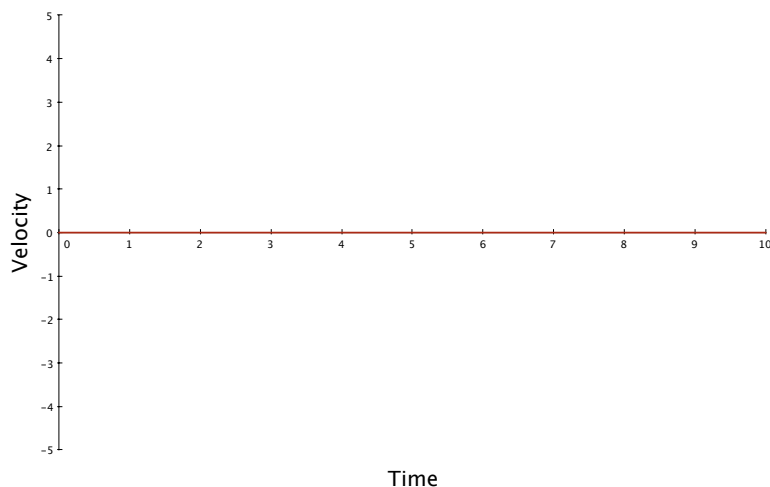
**Determine the motion shown by the following graphs.** Select the best term from the list.



- ☐ at rest
- ☒ constant positive velocity
- ☐ constant negative velocity
- ☐ constant positive acceleration
- ☐ constant negative acceleration

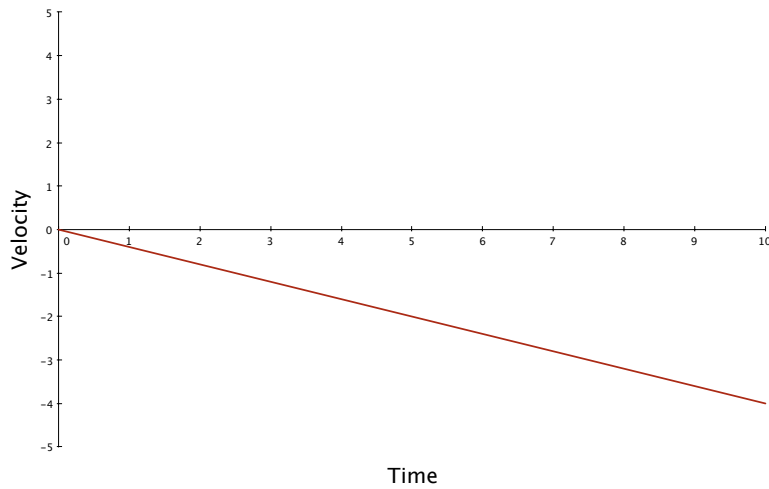


- ☐ at rest
- ☐ constant positive velocity
- ☐ constant negative velocity
- ☒ constant positive acceleration
- ☐ constant negative acceleration

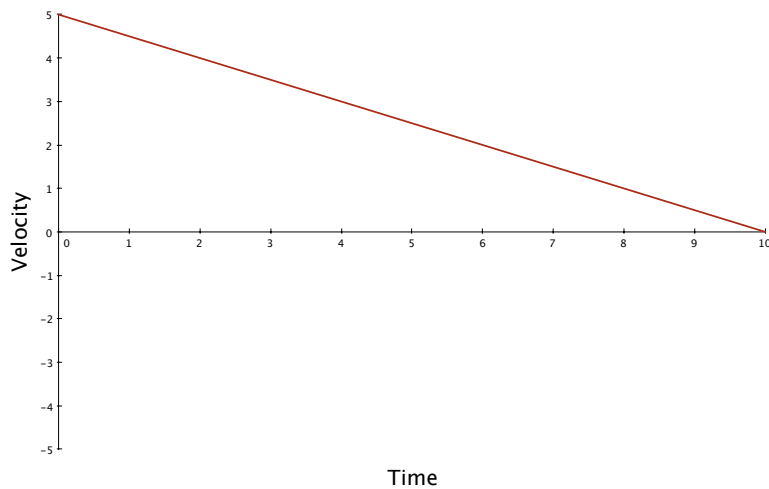


- ☒ at rest
- ☐ constant positive velocity
- ☐ constant negative velocity
- ☐ constant positive acceleration
- ☐ constant negative acceleration

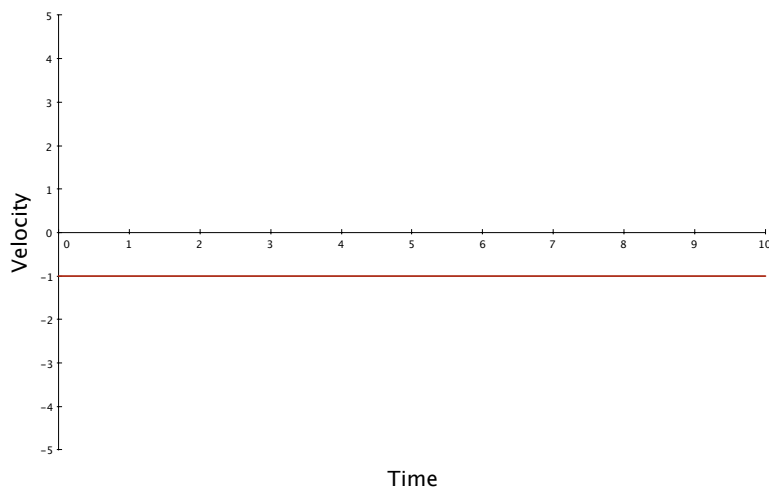
Determine the motion shown by the following graphs. Select the best term from the list.



- ☐ at rest
- ☐ constant positive velocity
- ☐ constant negative velocity
- ☐ constant positive acceleration
- ☒ constant negative acceleration

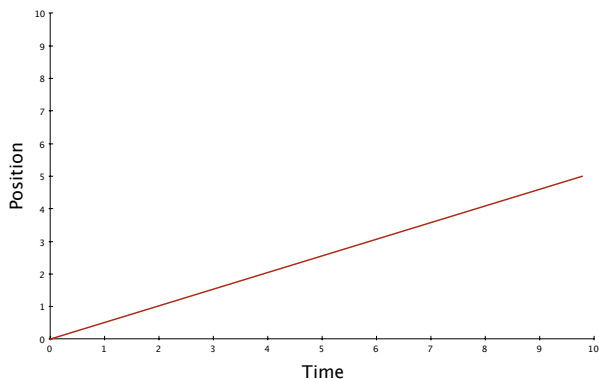


- ☐ at rest
- ☐ constant positive velocity
- ☐ constant negative velocity
- ☐ constant positive acceleration
- ☒ constant negative acceleration

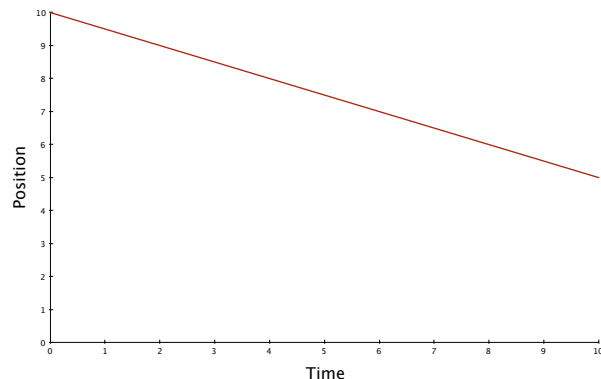


- ☐ at rest
- ☐ constant positive velocity
- ☒ constant negative velocity
- ☐ constant positive acceleration
- ☐ constant negative acceleration

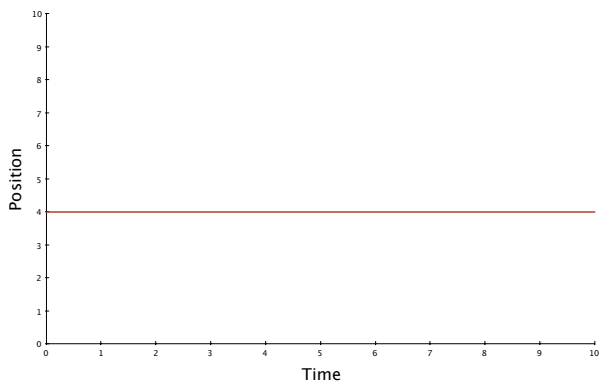
**Describe the motion shown by the following graphs.** Use terms like *constant positive velocity*, *at rest*, *positive acceleration from rest*, and so on.



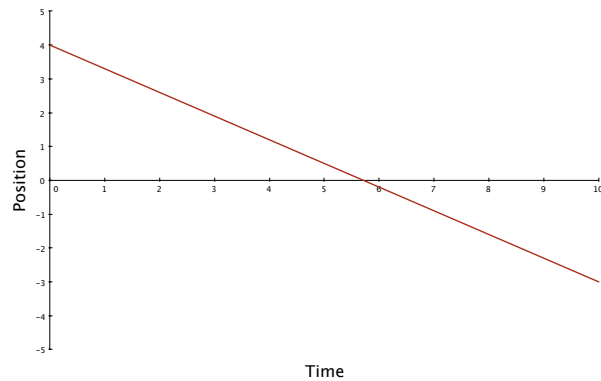
constant positive velocity  
uniform motion (forward)



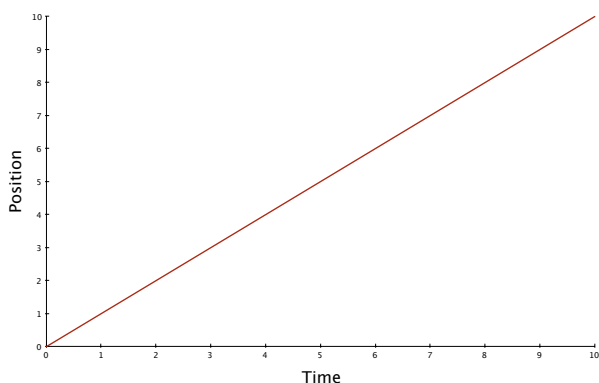
constant negative velocity  
uniform motion (backward)



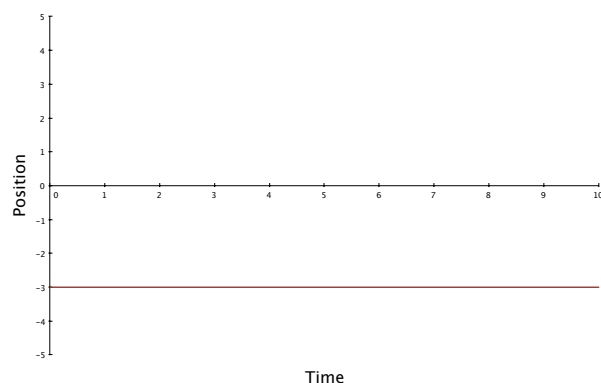
at rest



constant negative velocity  
uniform motion (backward)

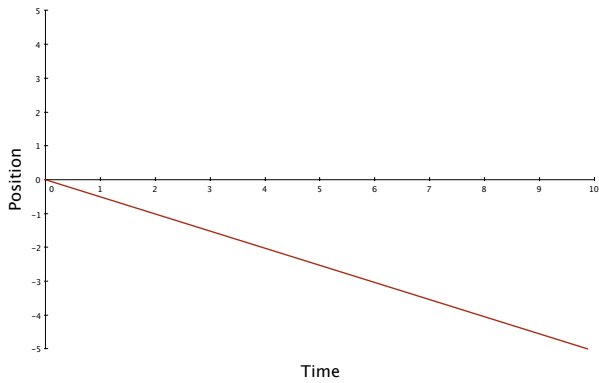


constant positive velocity  
uniform motion (forward)

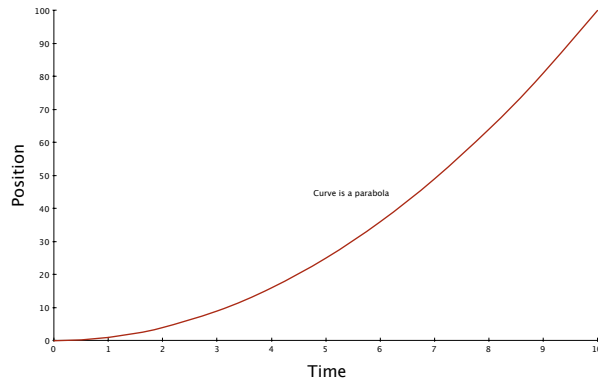


at rest

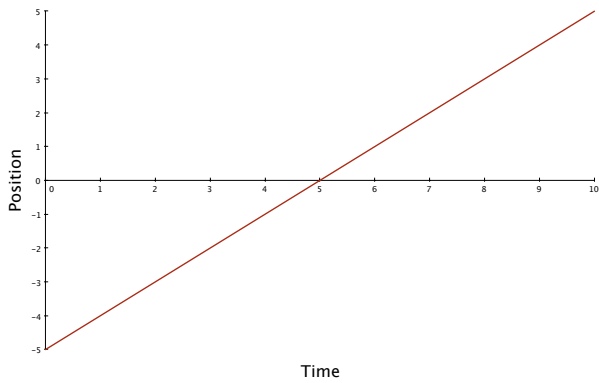
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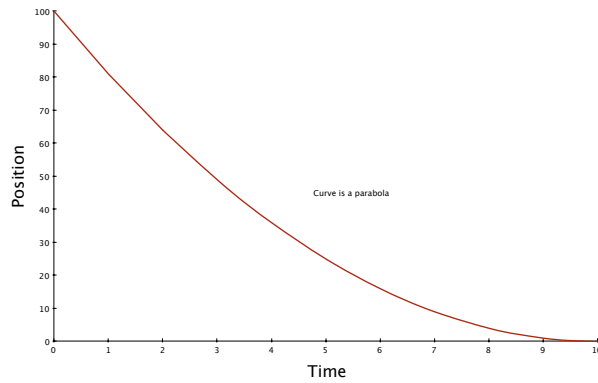
constant negative velocity  
uniform motion (backward)



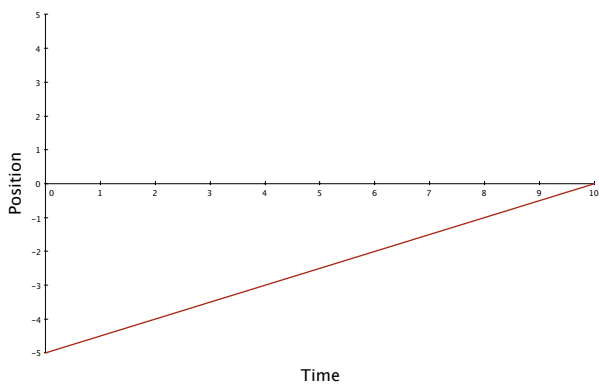
constant positive acceleration



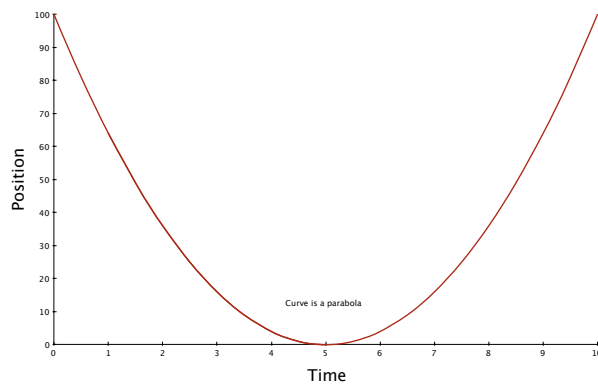
constant positive velocity  
uniform motion (forward)



constant positive acceleration

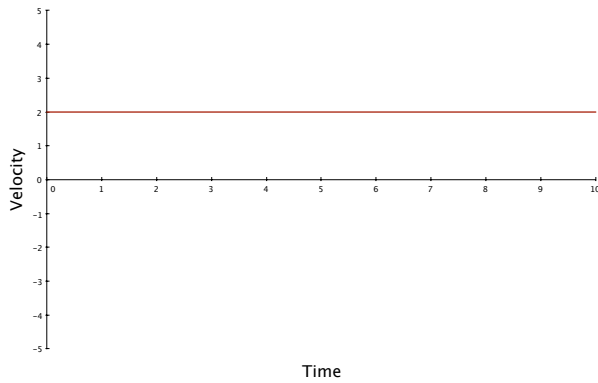


constant positive velocity  
uniform motion (forward)

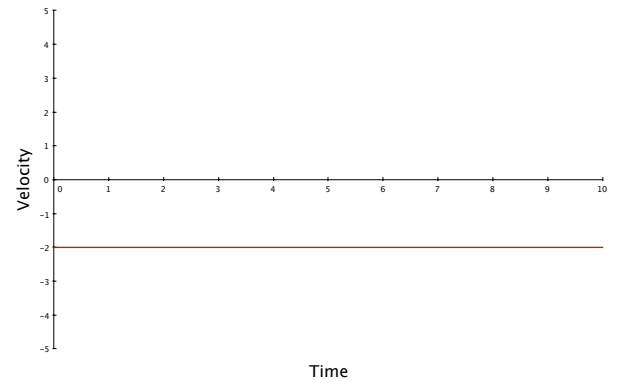


constant positive acceleration

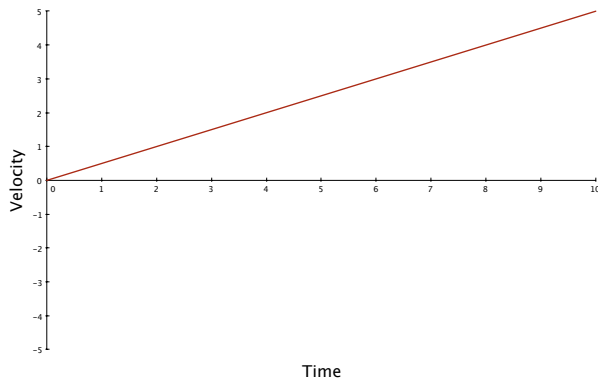
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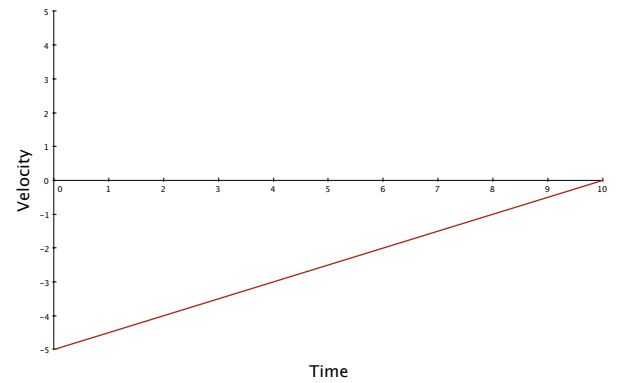
constant positive velocity  
uniform motion (forward)



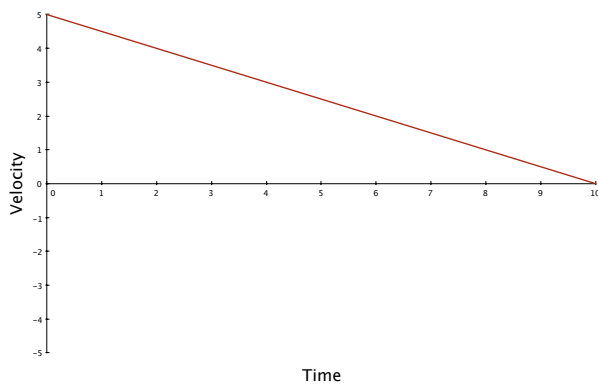
constant negative velocity  
uniform motion (backward)



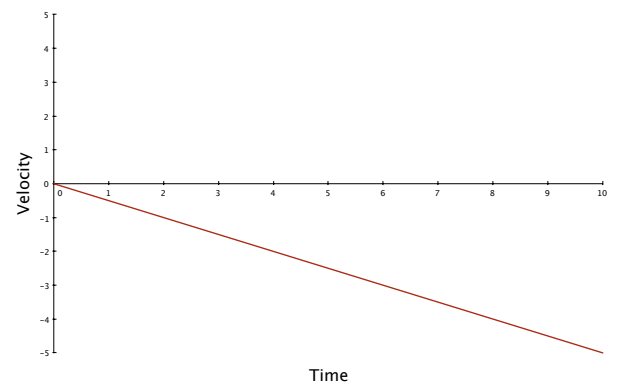
constant positive acceleration



constant positive acceleration



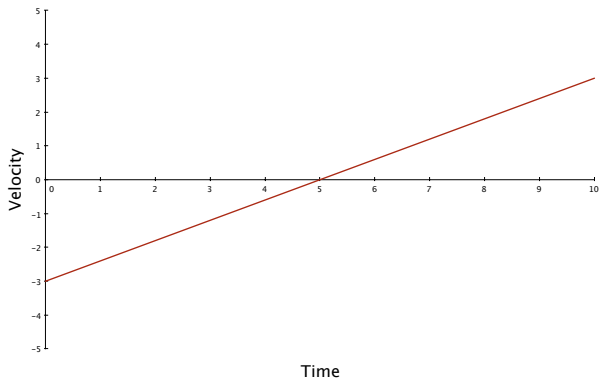
constant negative acceleration



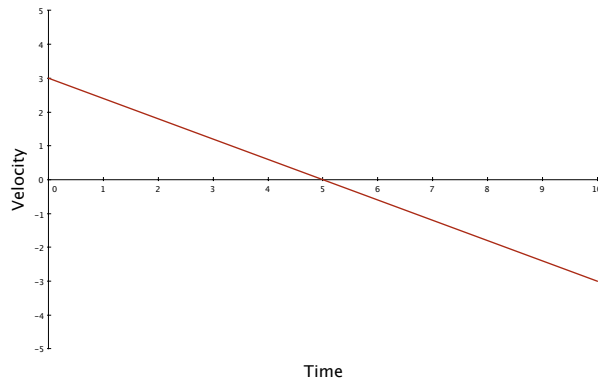
constant negative acceleration



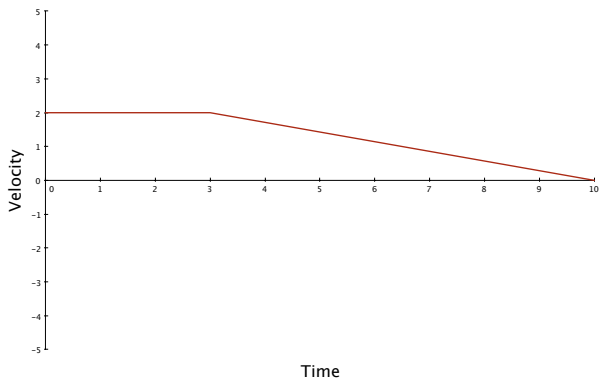
**Describe the motion shown by the following graphs.** Use terms like *constant positive velocity*, *at rest*, *positive acceleration from rest*, and so on.



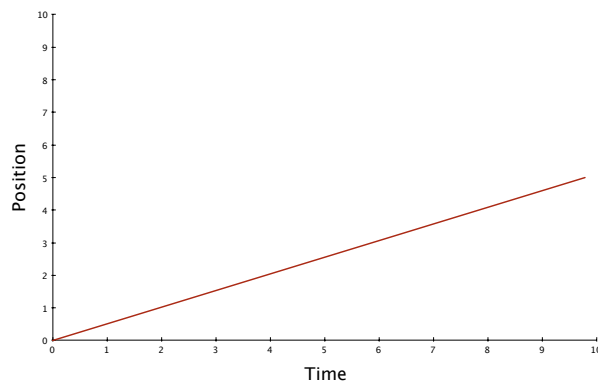
constant positive acceleration



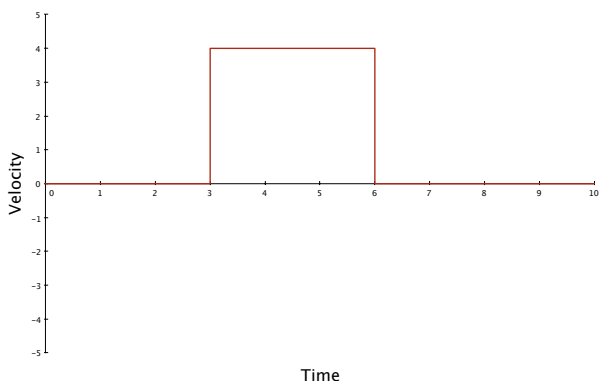
constant negative acceleration



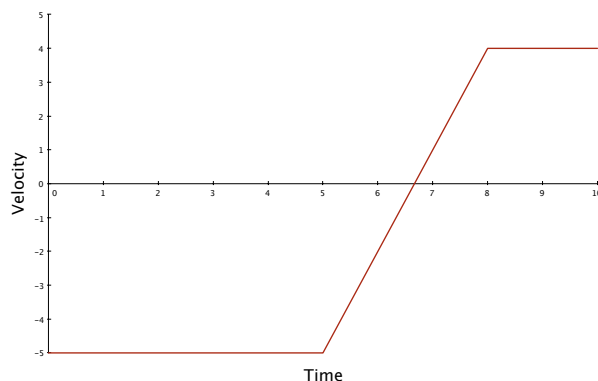
constant positive velocity, then  
constant negative acceleration until  
at rest



constant positive velocity  
uniform motion (forward)

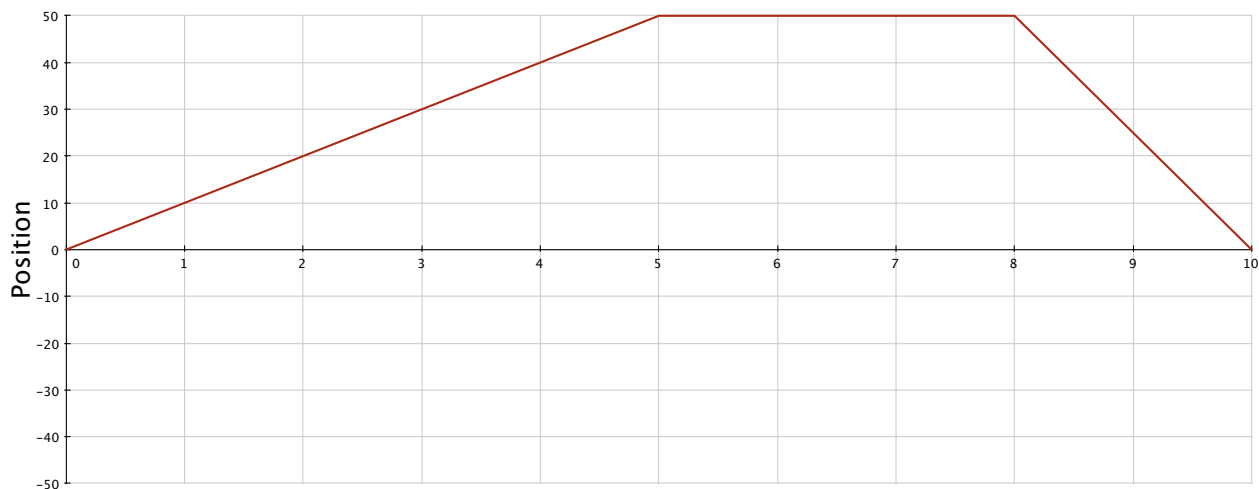


at rest, constant positive  
velocity, then at rest

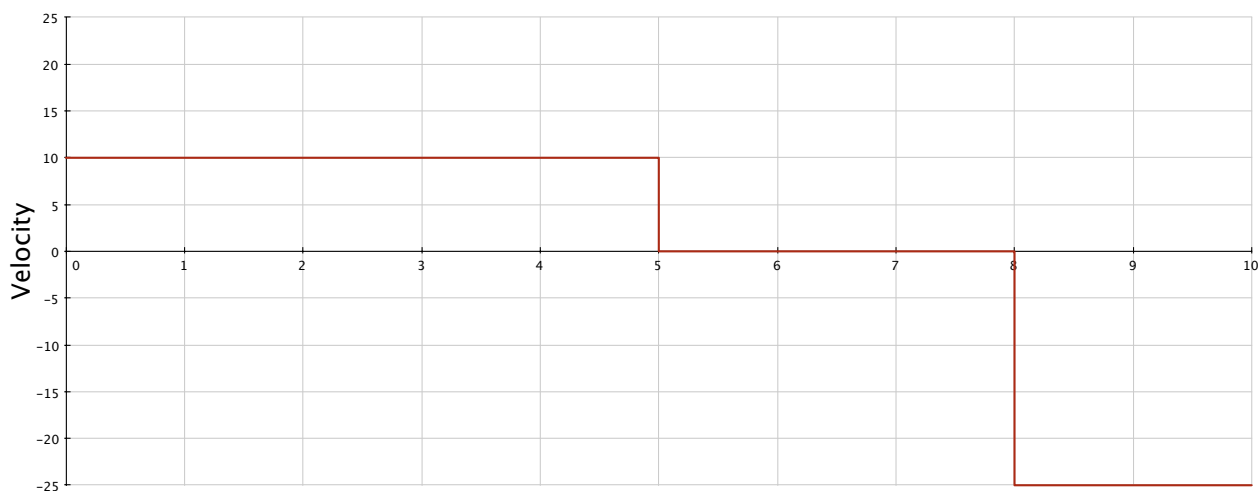


constant negative velocity, constant  
positive acceleration, then constant  
positive velocity

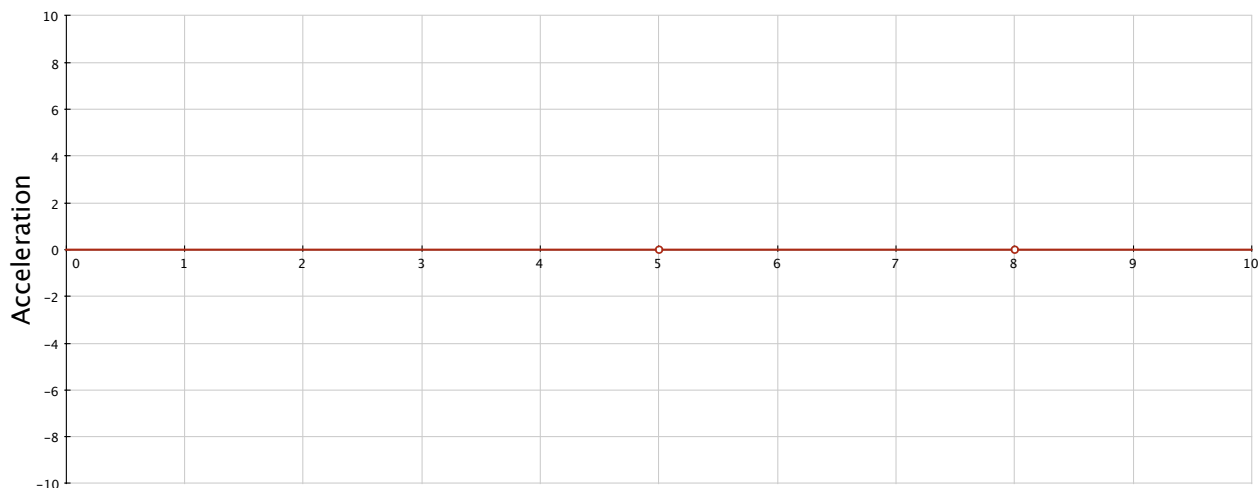
**Sketch the missing motion graphs.** Pay particular attention to shape and inflection points. Change the values of the vertical axis if necessary.



Time

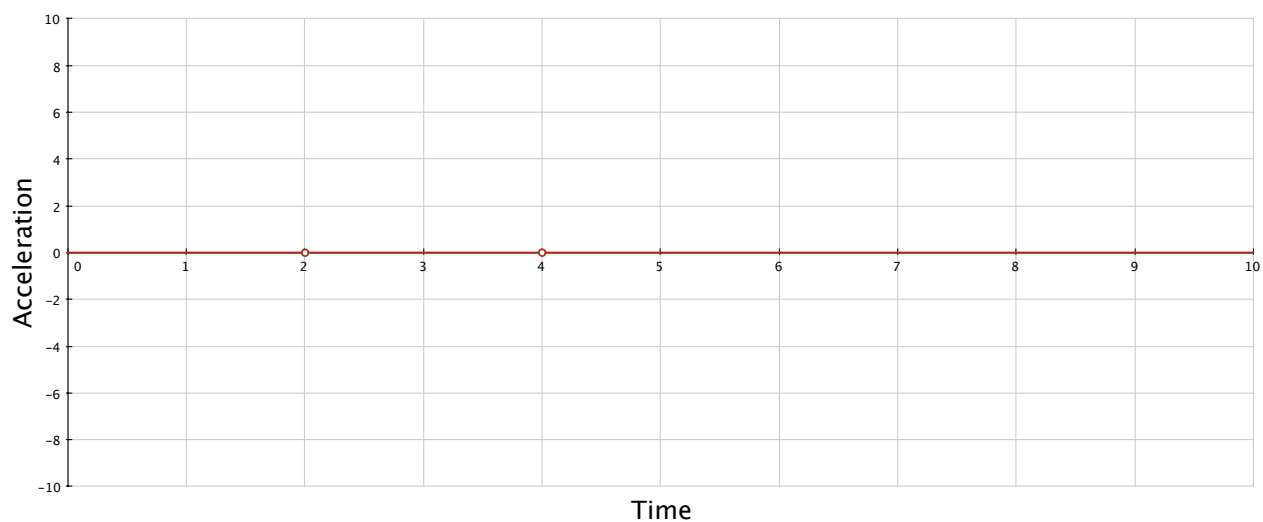
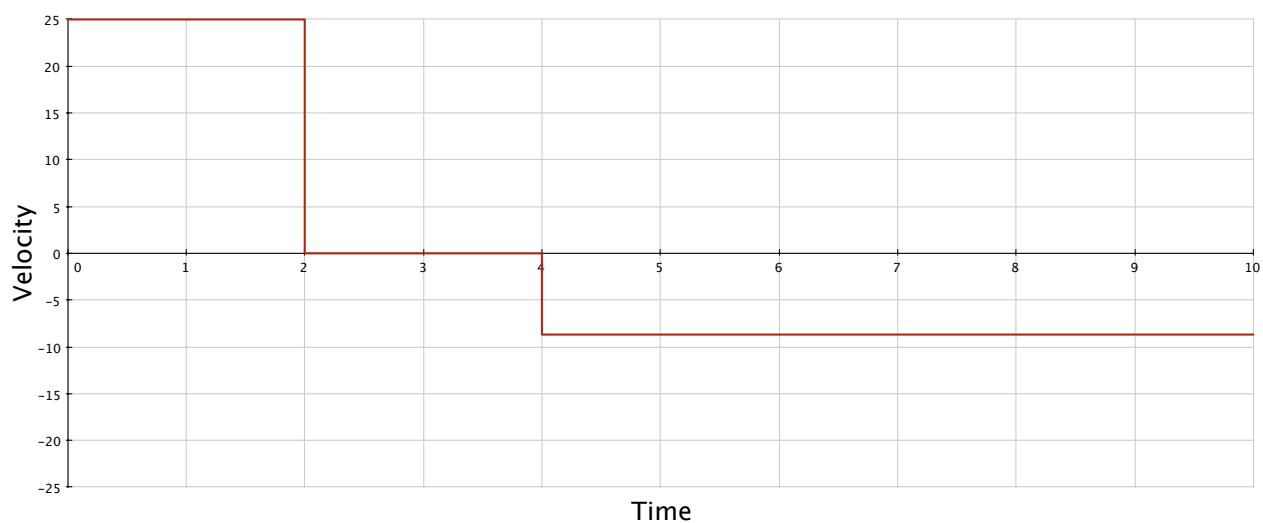
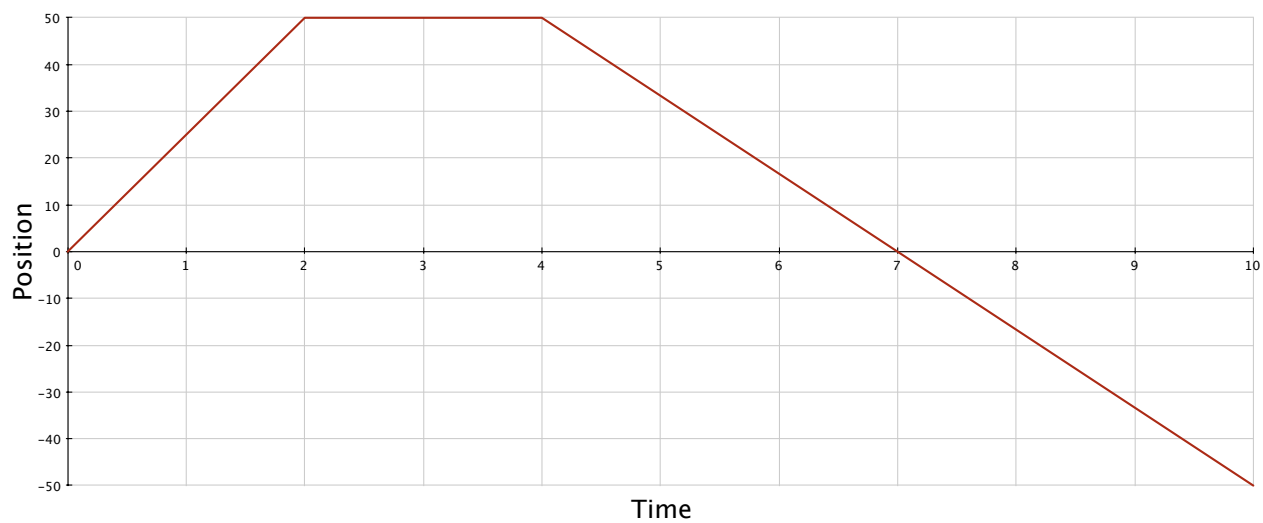


Time

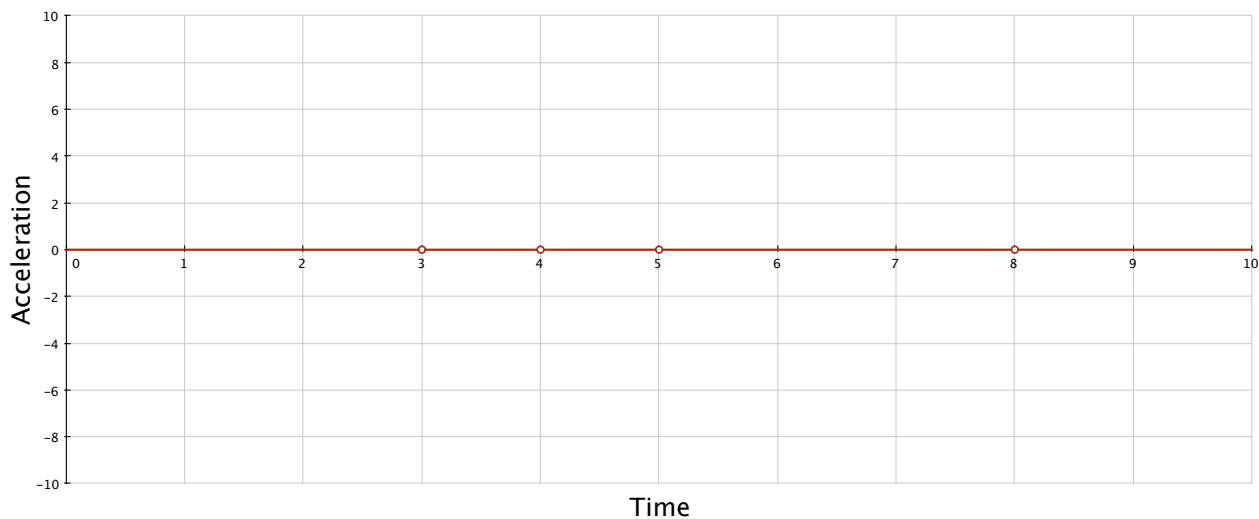
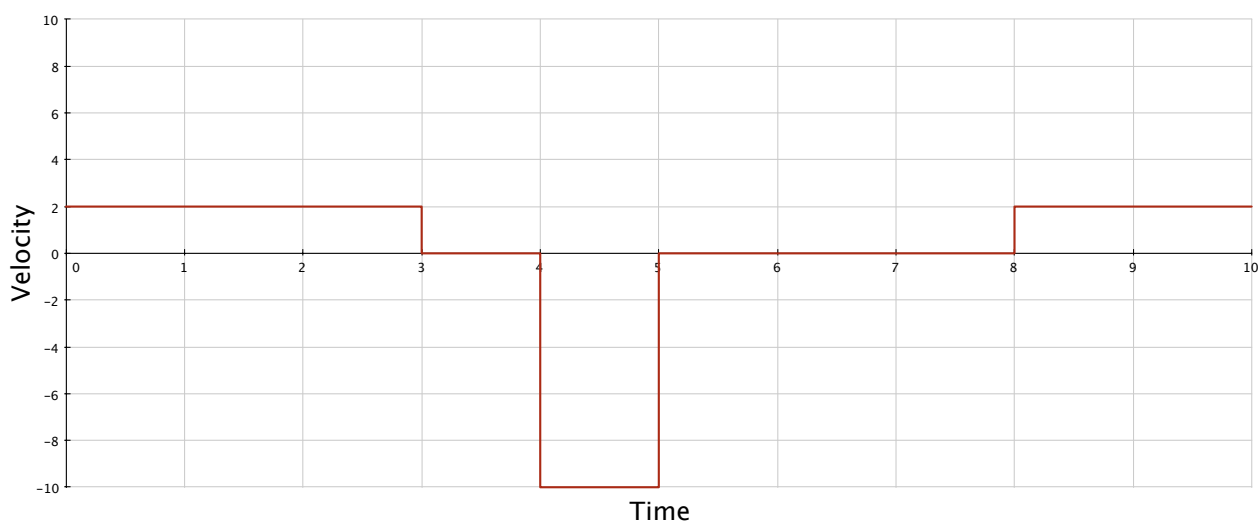
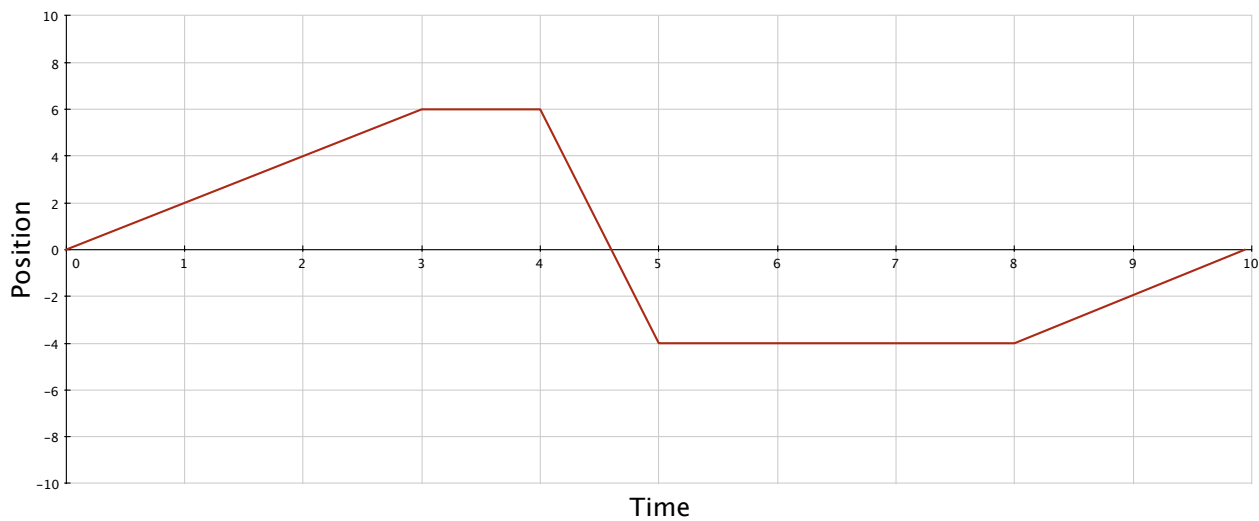


Time

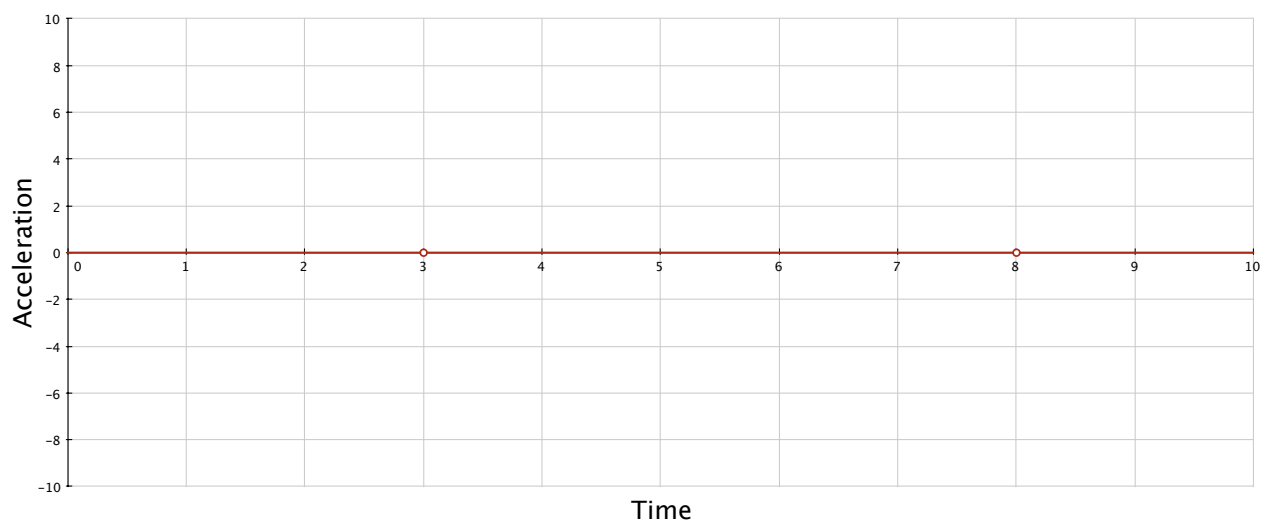
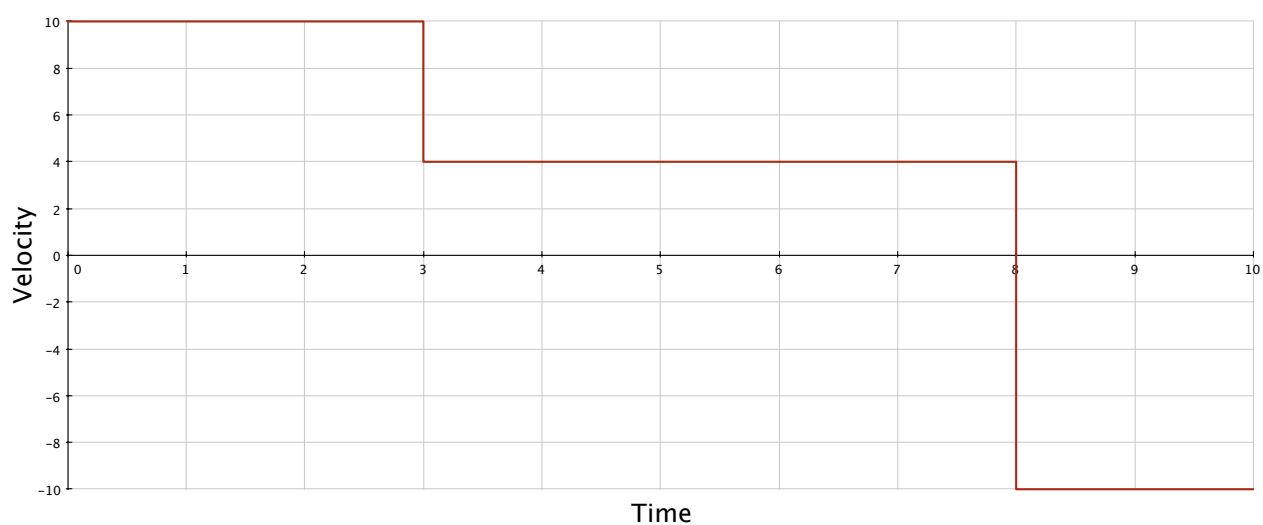
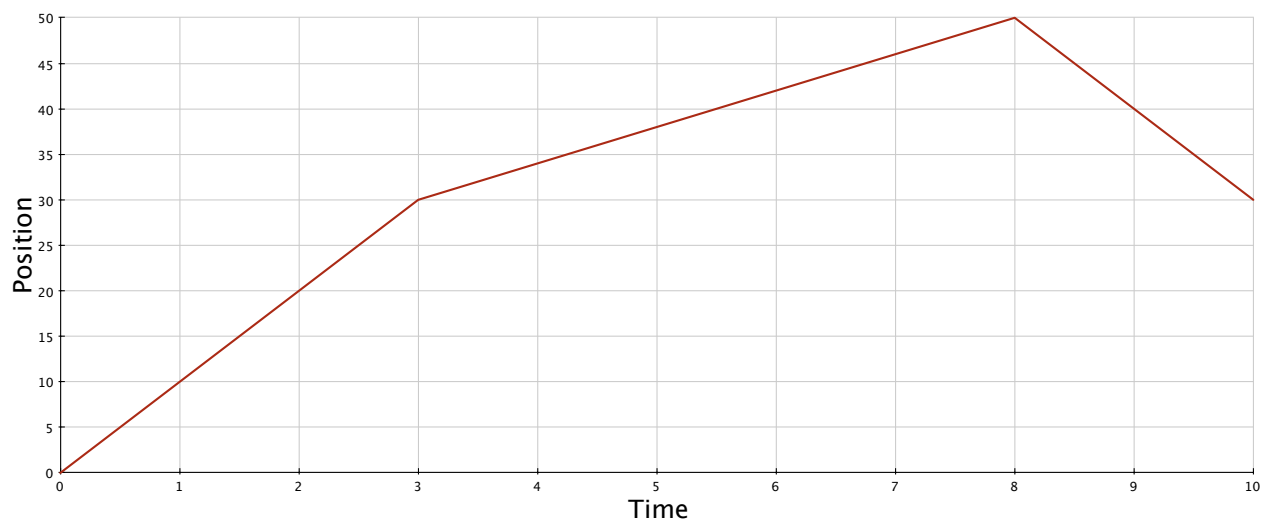
**Sketch the missing motion graphs.** Pay particular attention to shape and inflection points. Change the values of the vertical axis if necessary.



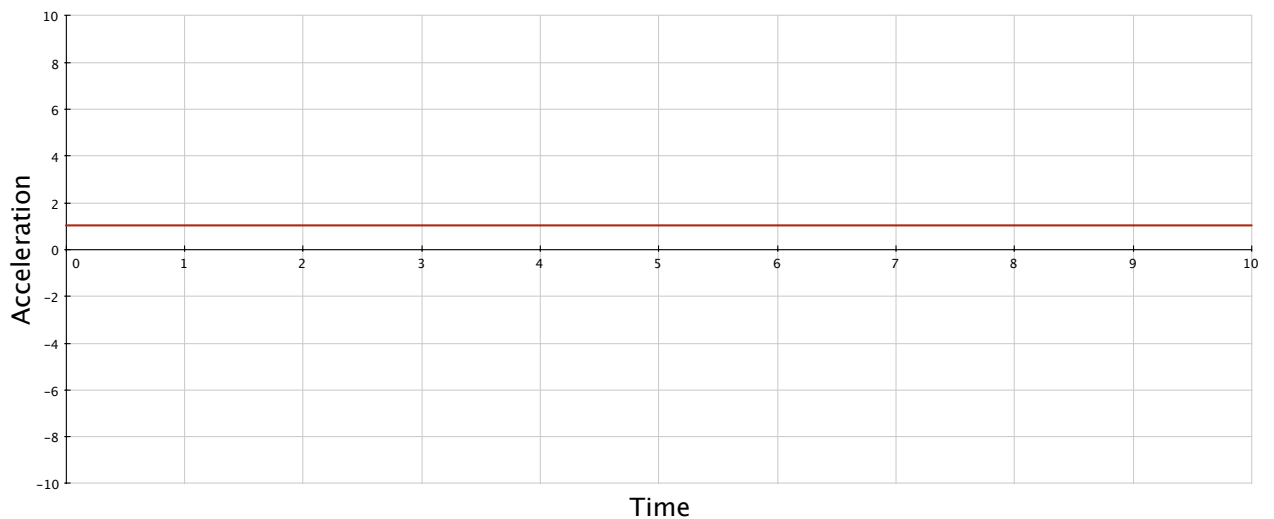
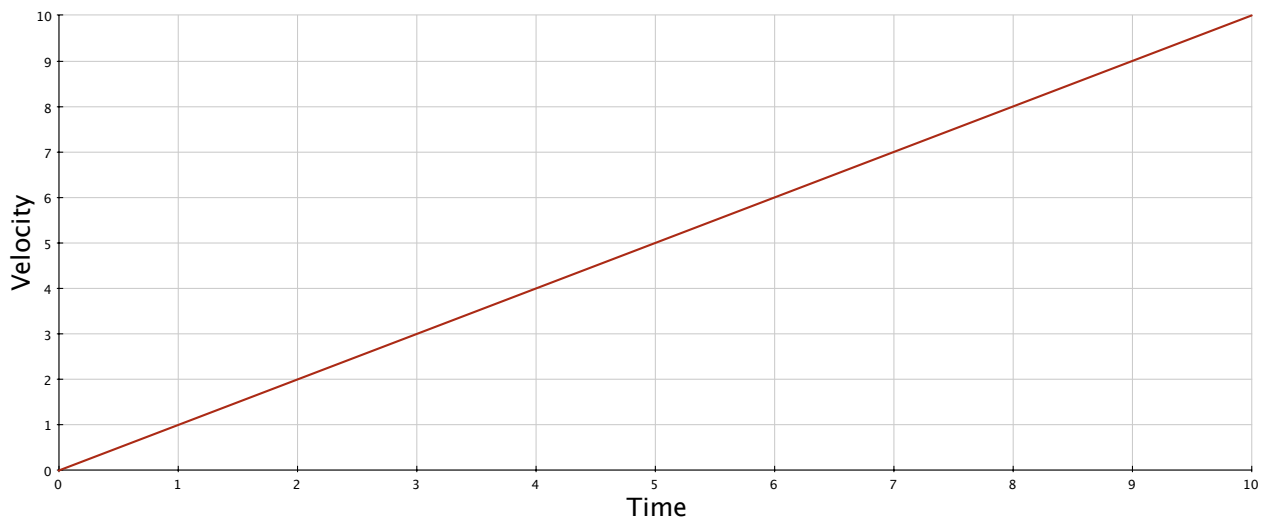
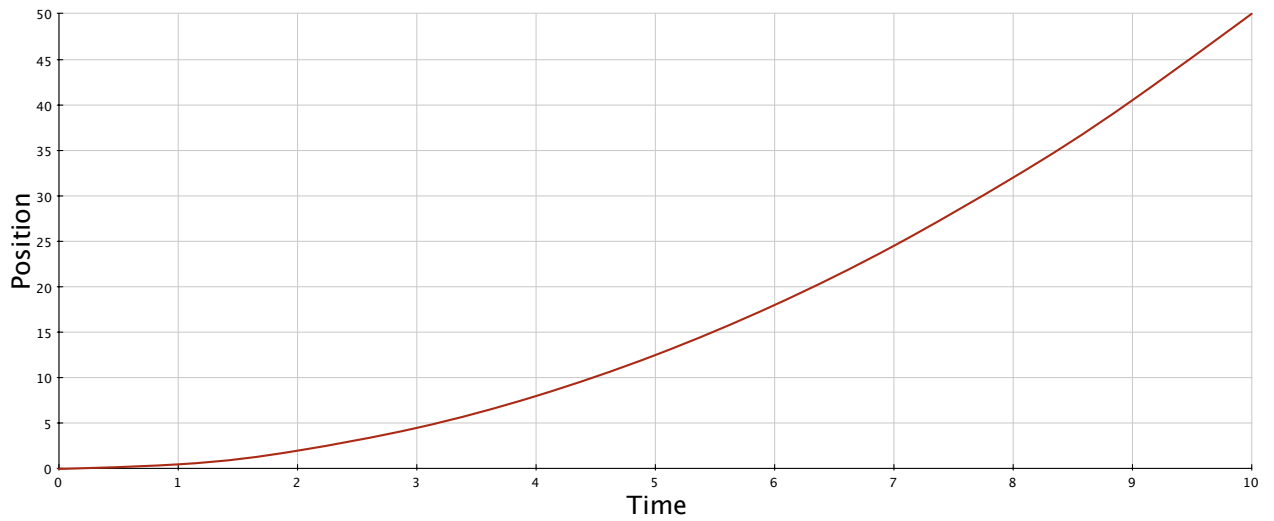
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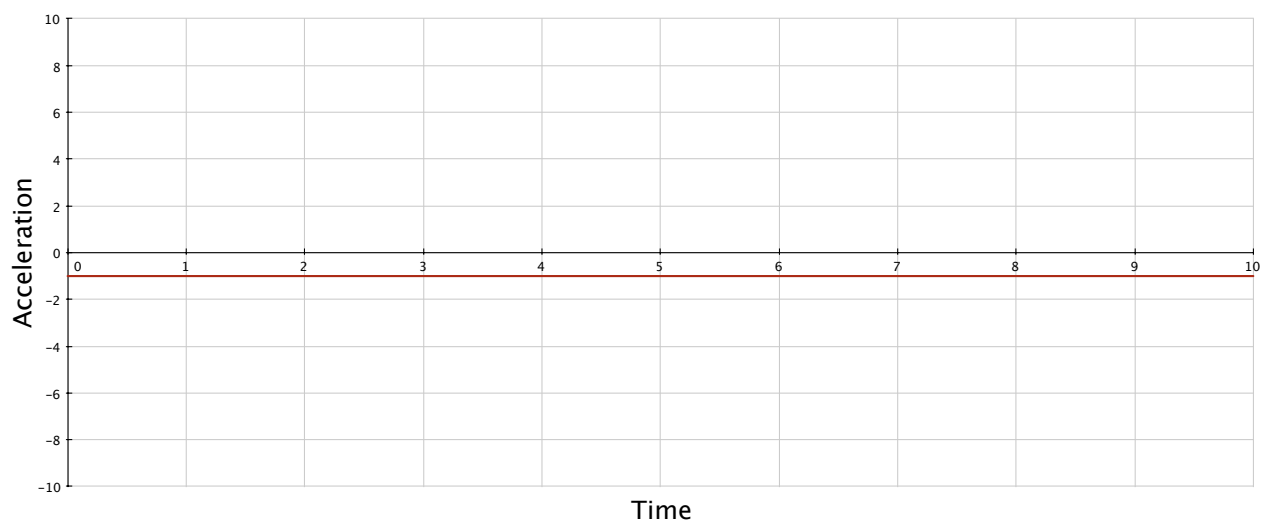
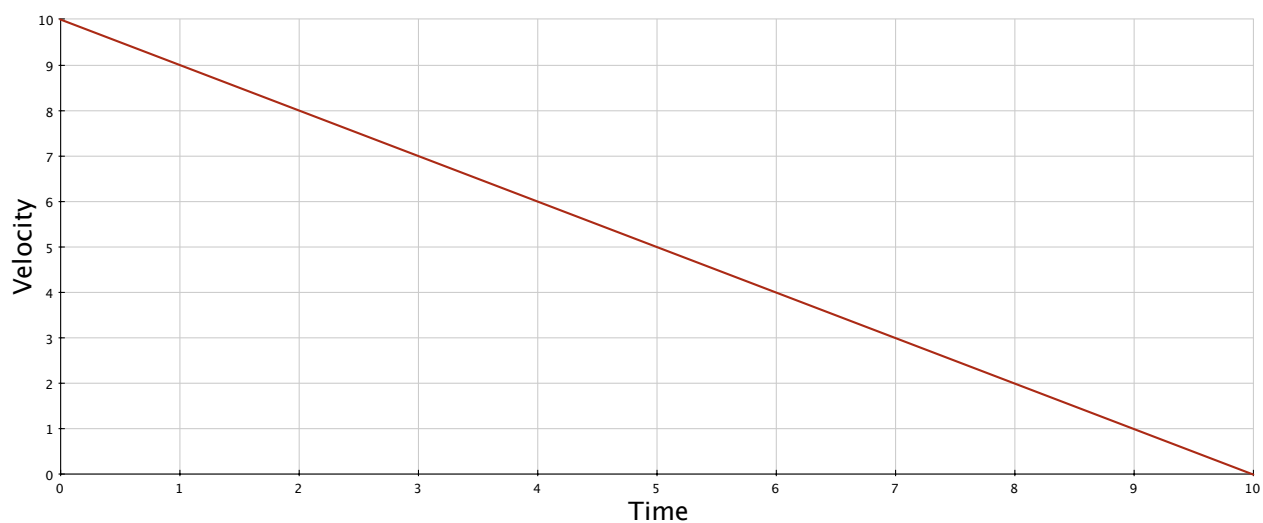
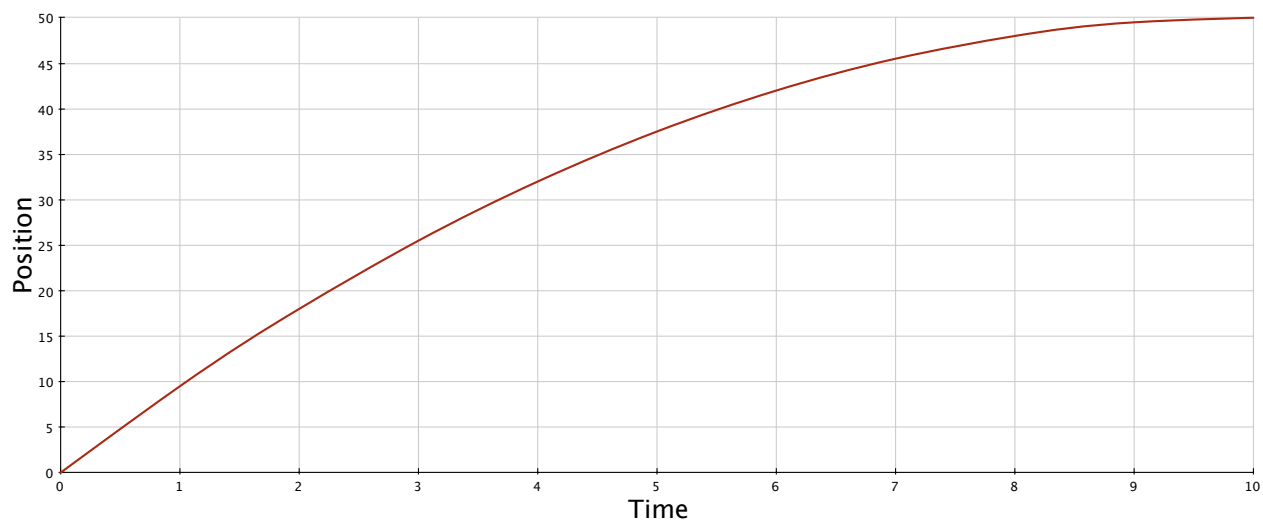
**Sketch the missing motion graphs.** Pay particular attention to shape and inflection points. Change the values of the vertical axis if necessary.



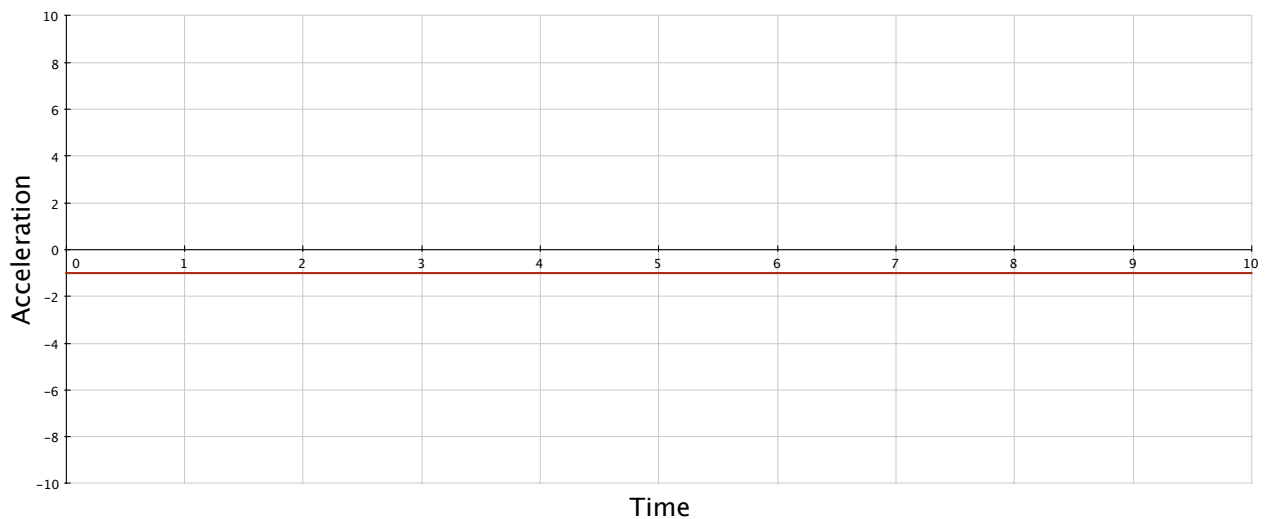
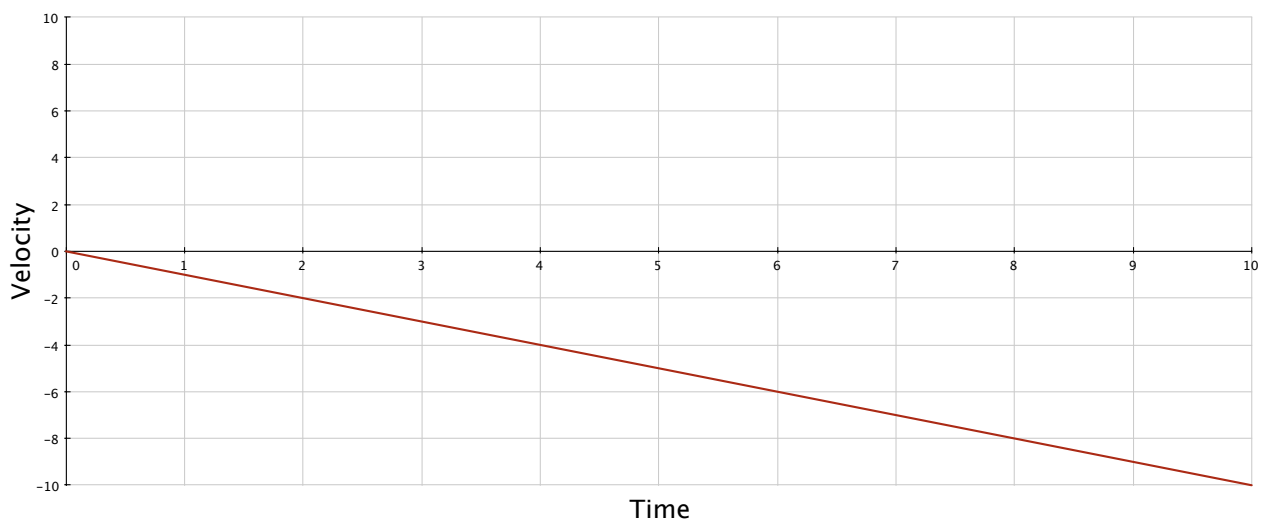
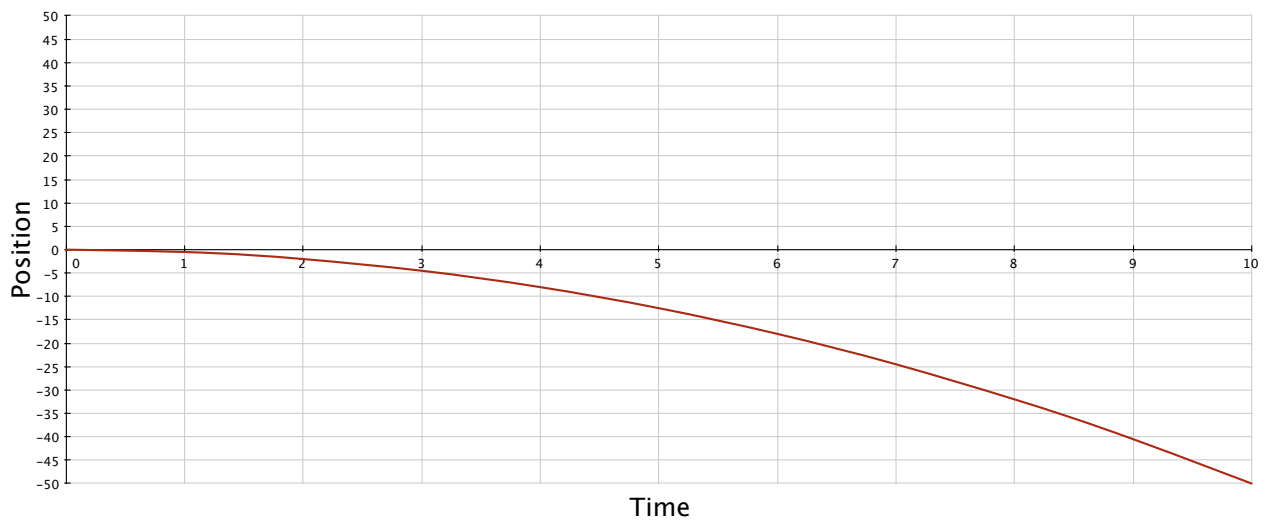
**Sketch the missing motion graphs.** Pay particular attention to shape and inflection points. Change the values of the vertical axis if necessary.



**Sketch the missing motion graphs.** Pay particular attention to shape and inflection points. Change the values of the vertical axis if necessary.

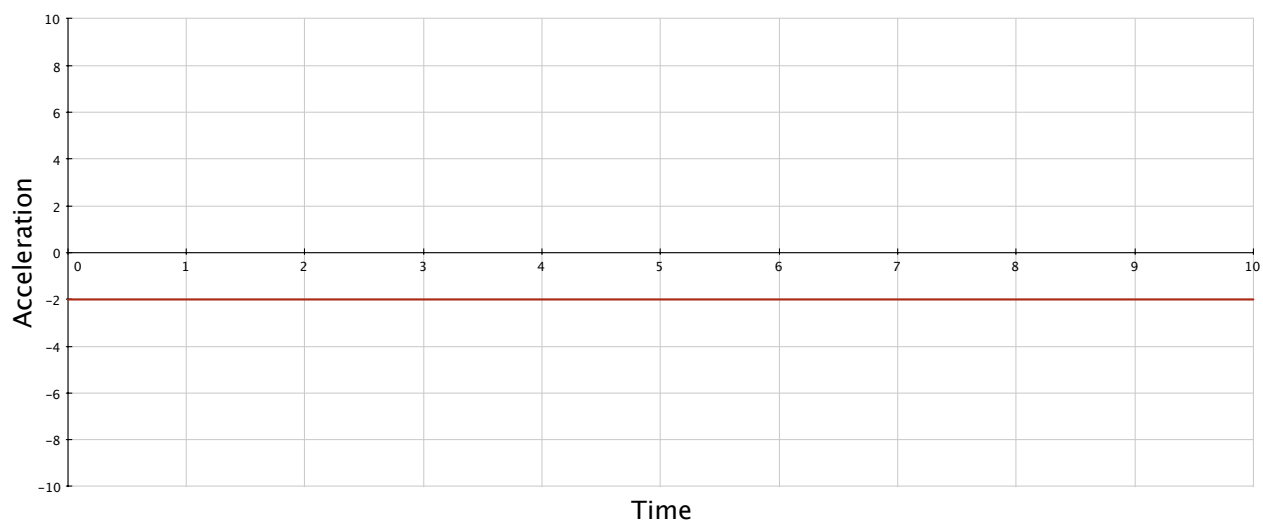
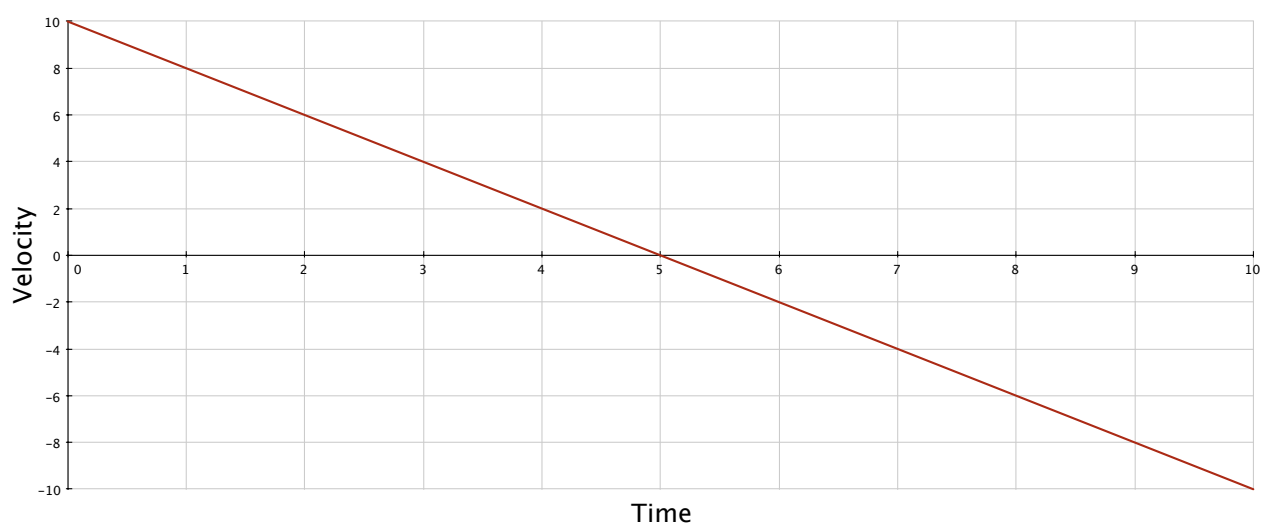
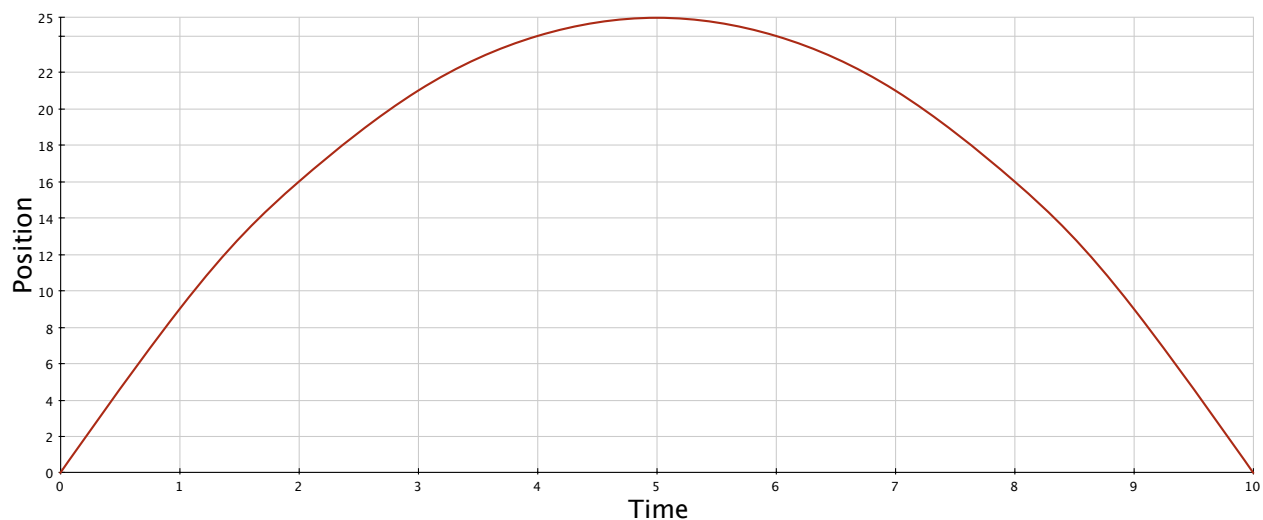


**Sketch the missing motion graphs.** Pay particular attention to shape and inflection points. Change the values of the vertical axis if necessary.

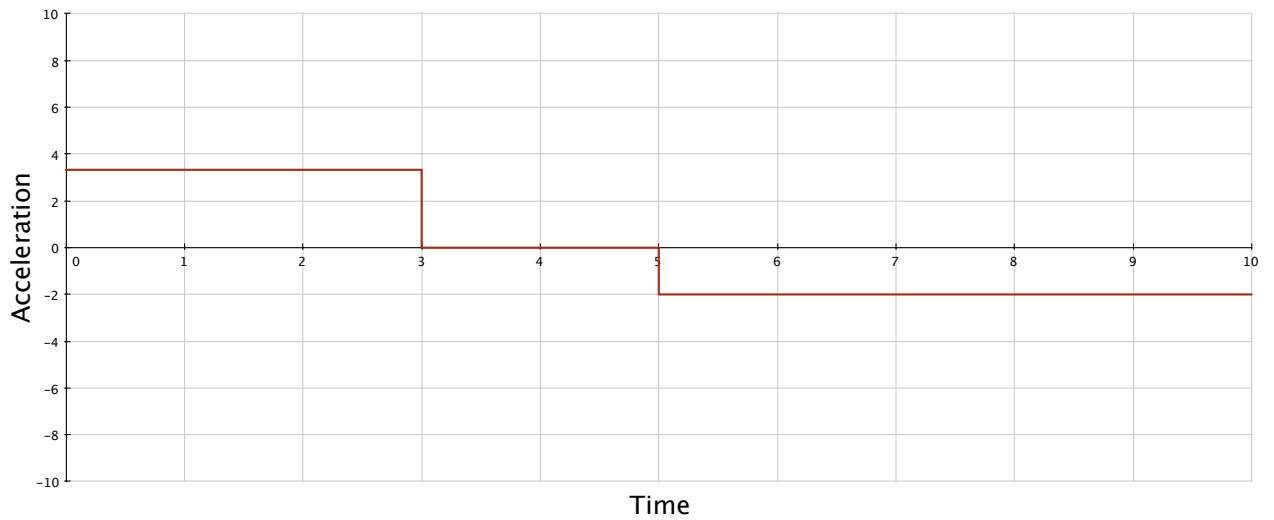
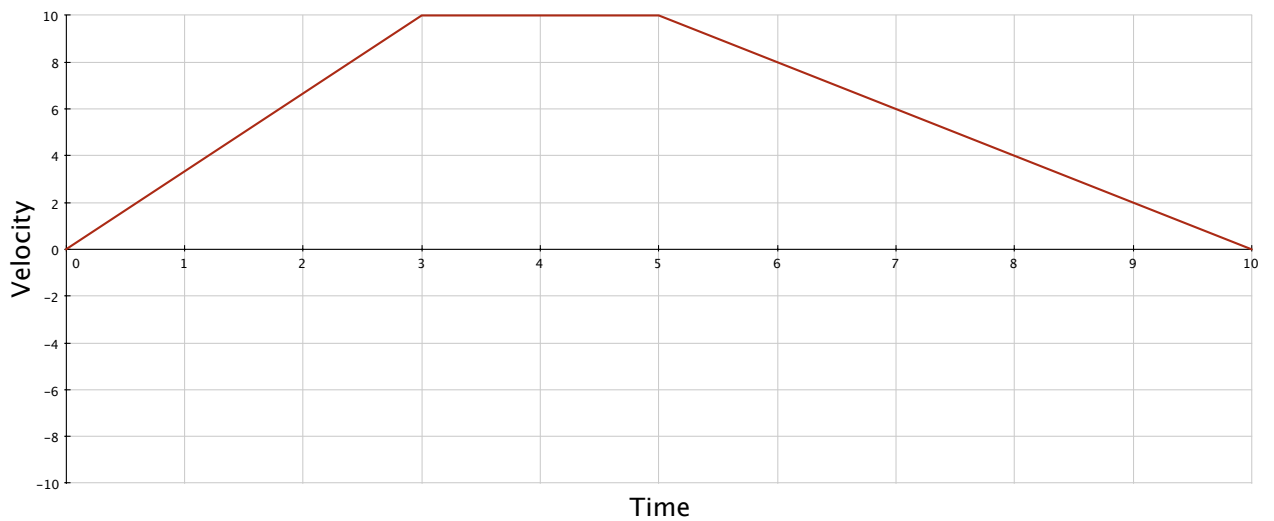
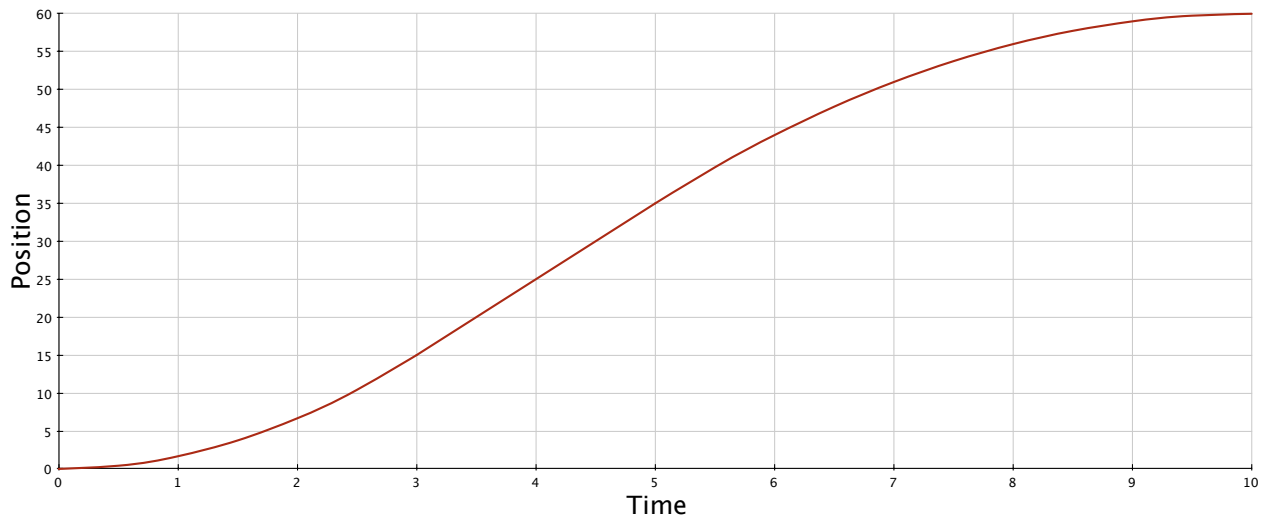




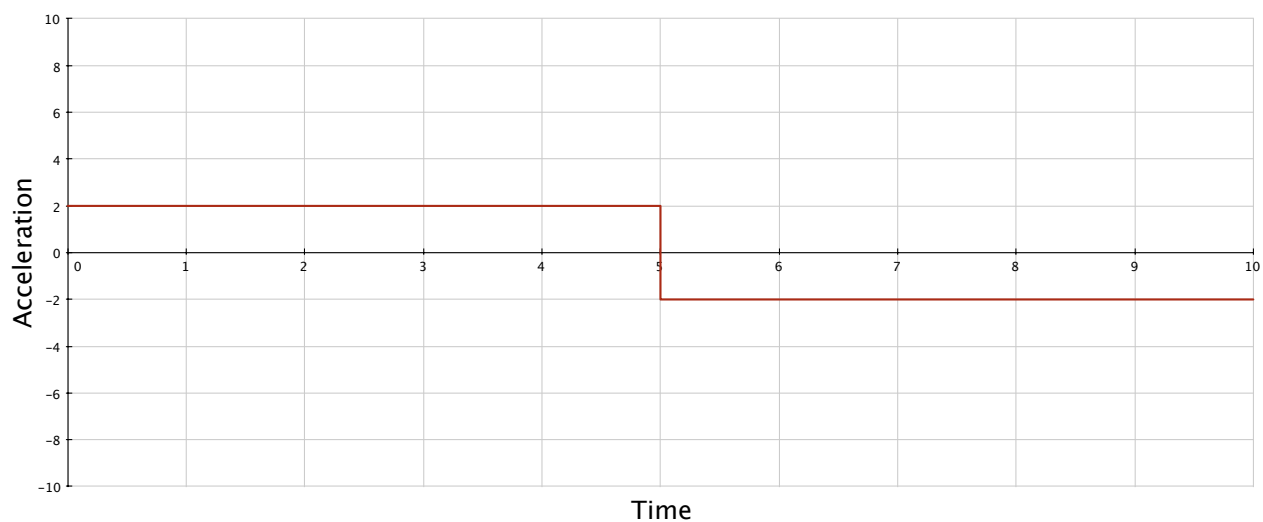
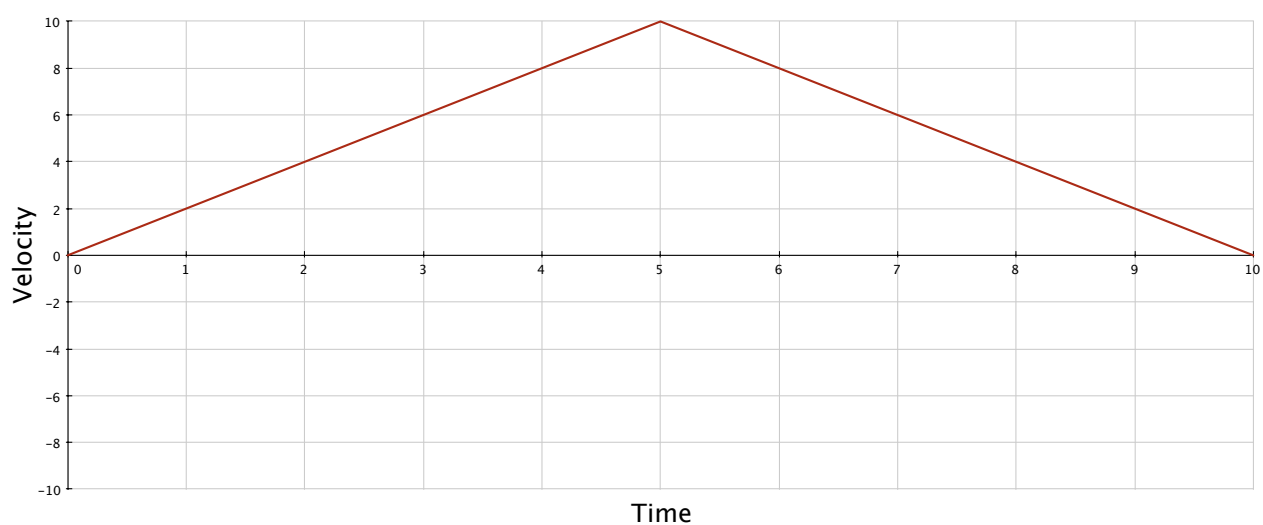
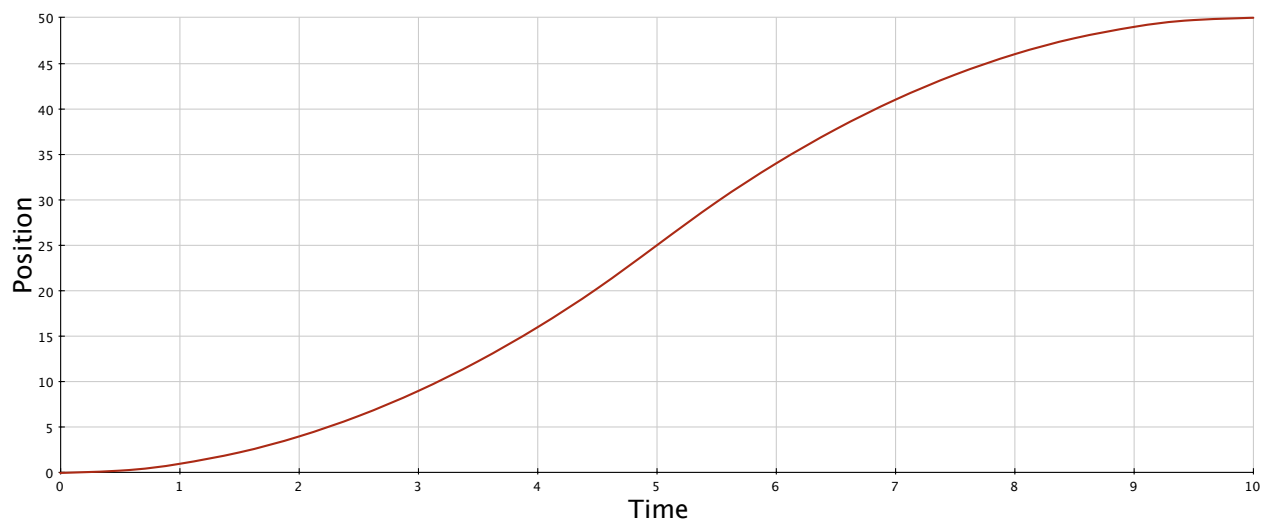
**Sketch the missing motion graphs.** Pay particular attention to shape and inflection points. Change the values of the vertical axis if necessary.



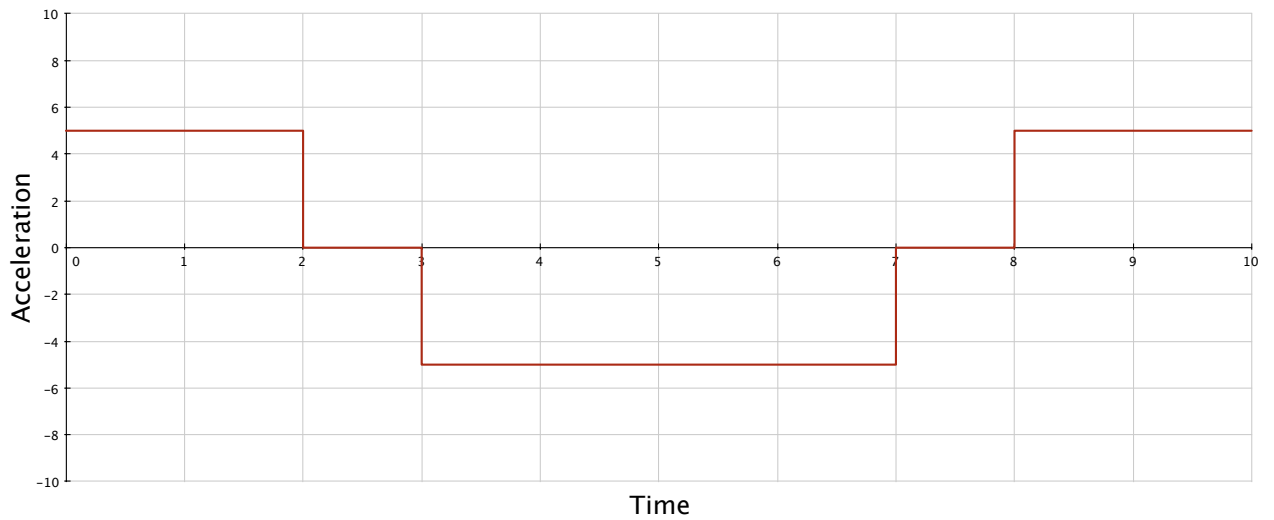
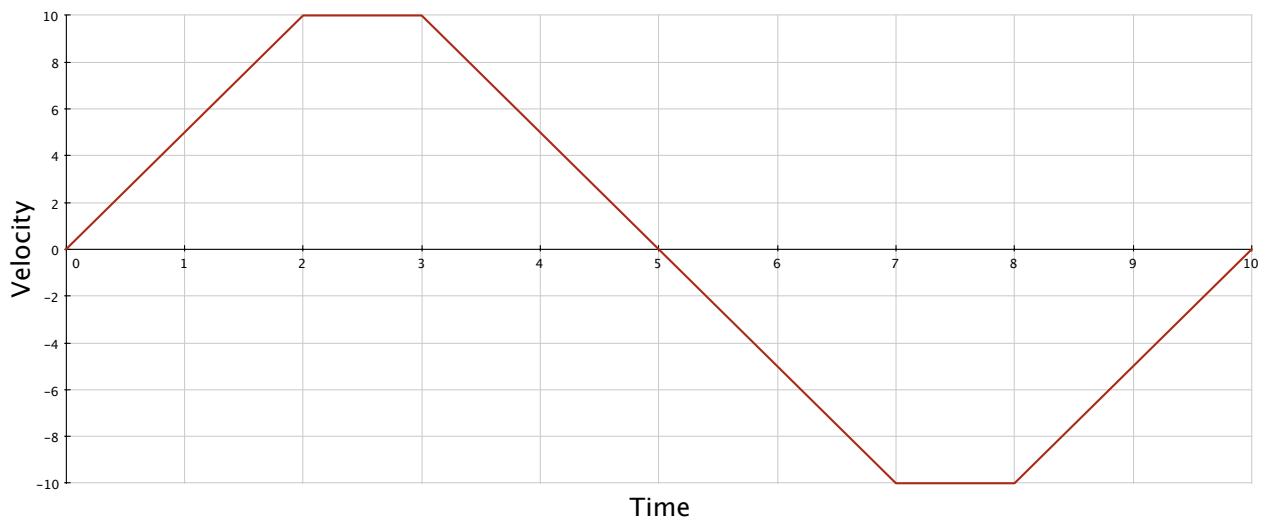
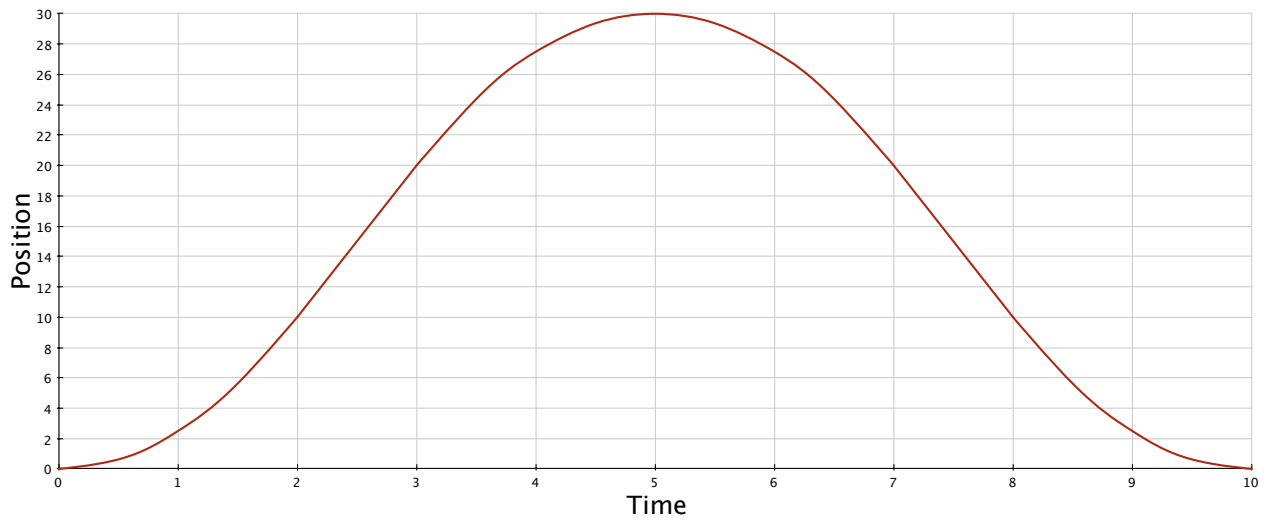
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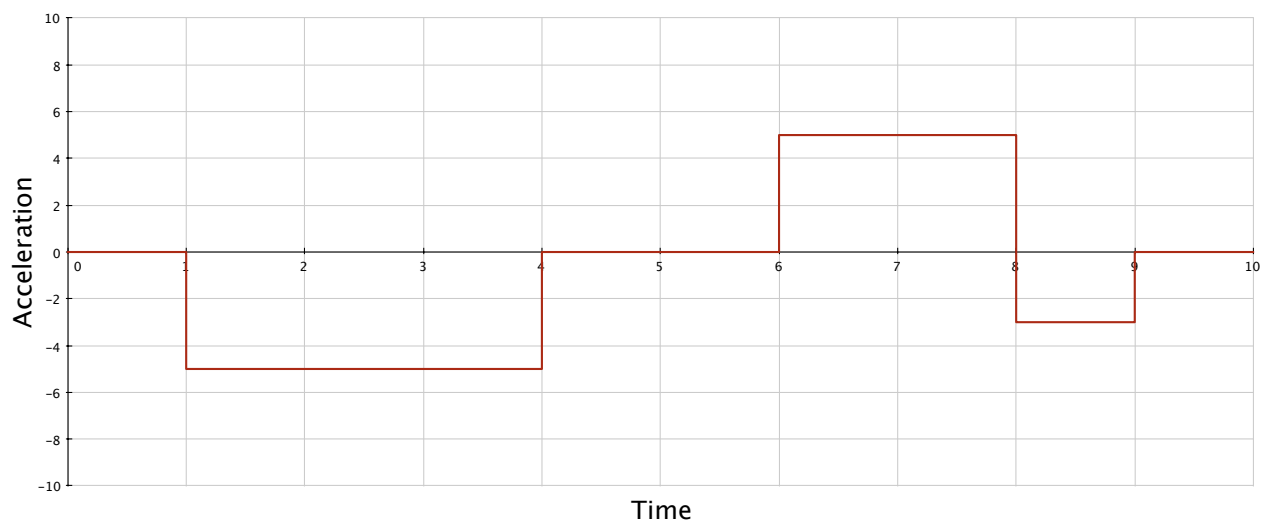
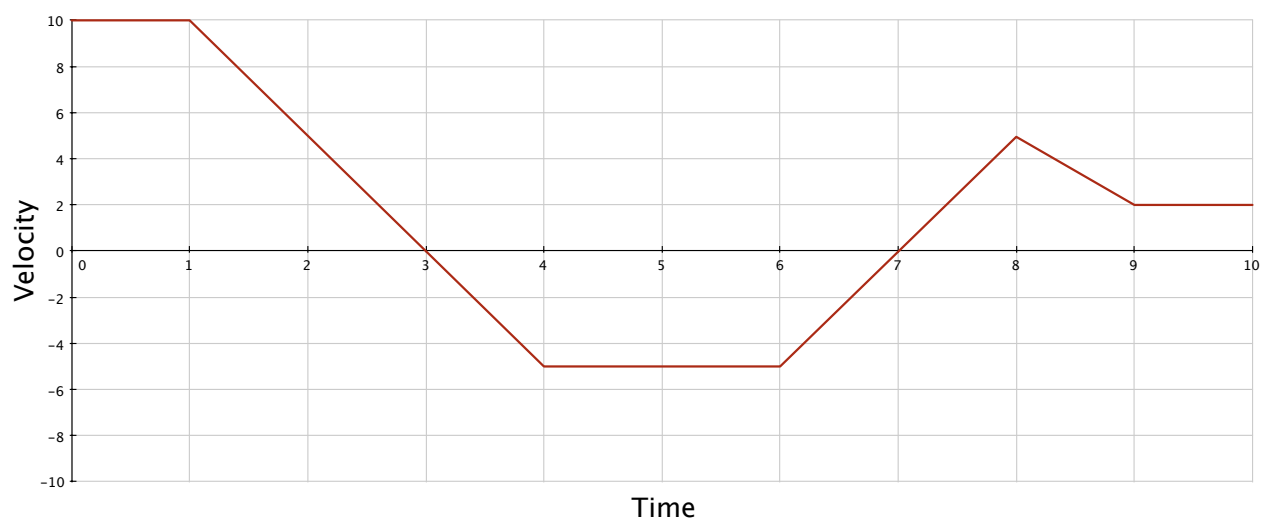
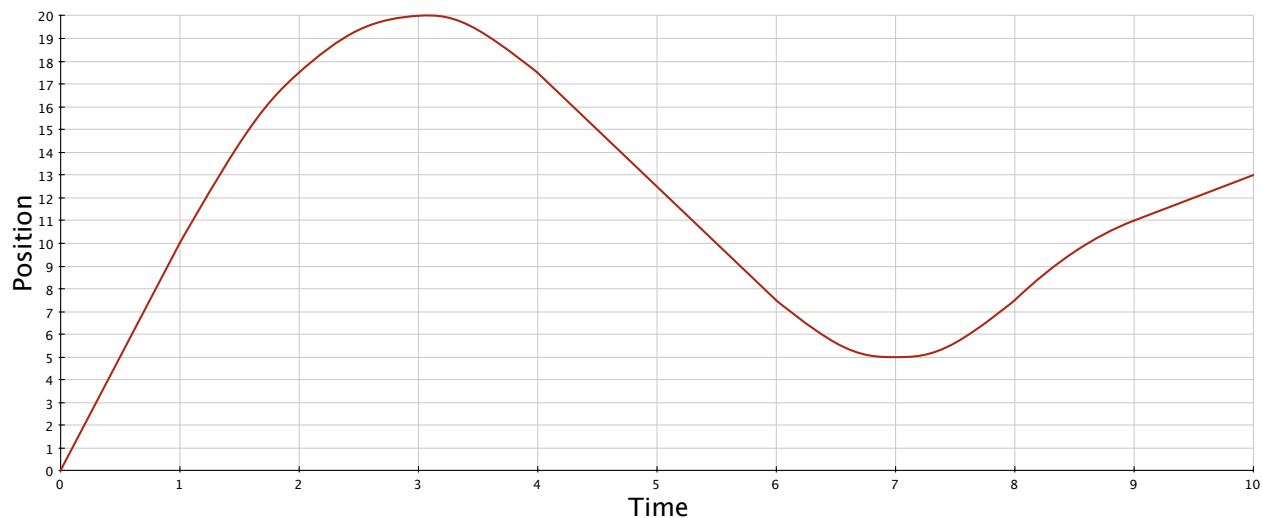
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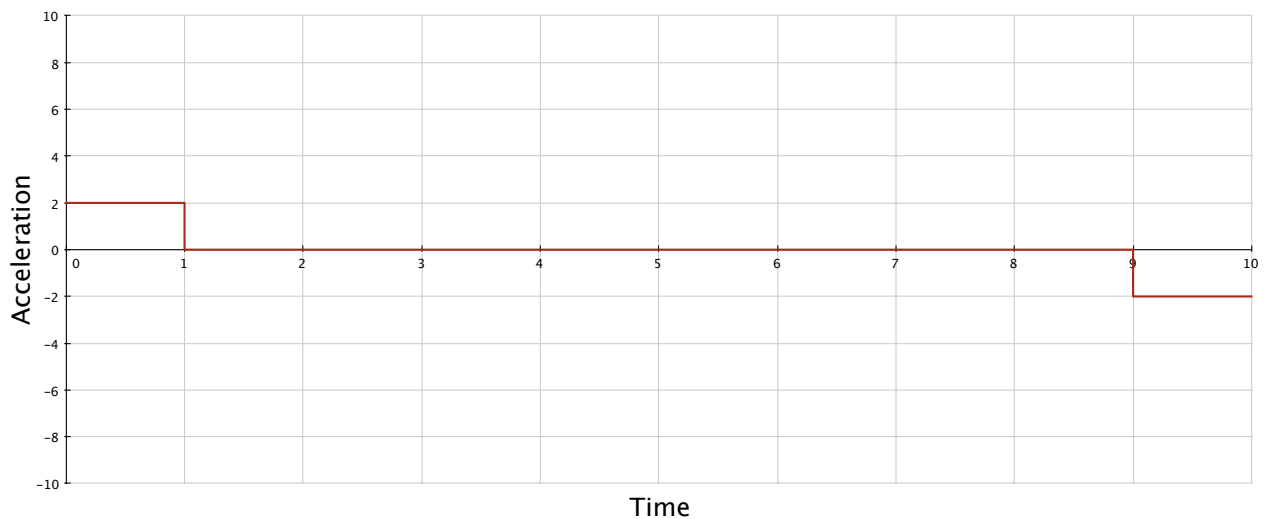
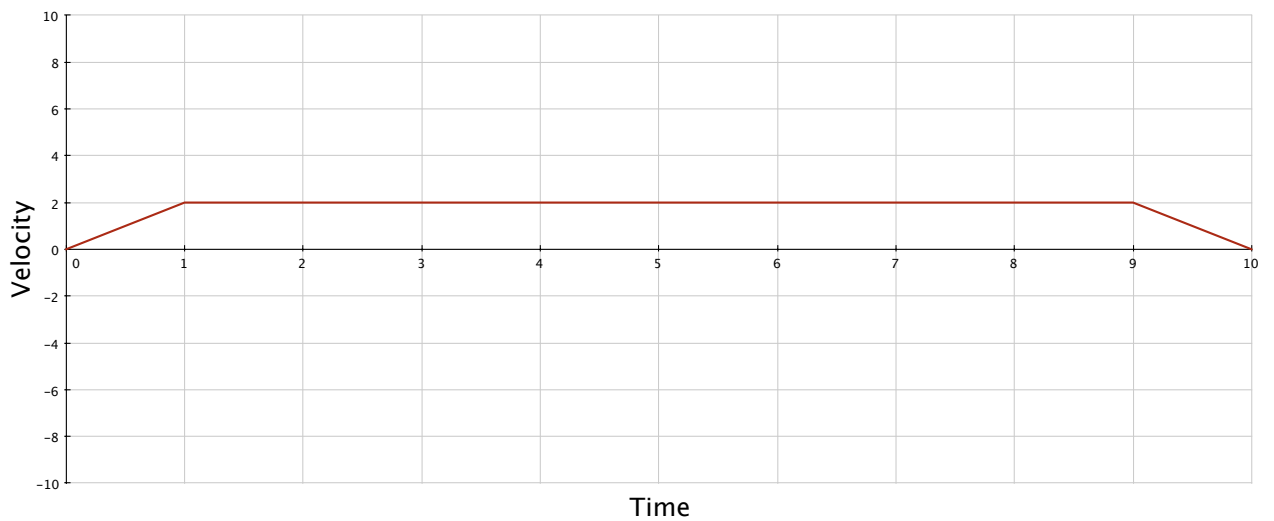
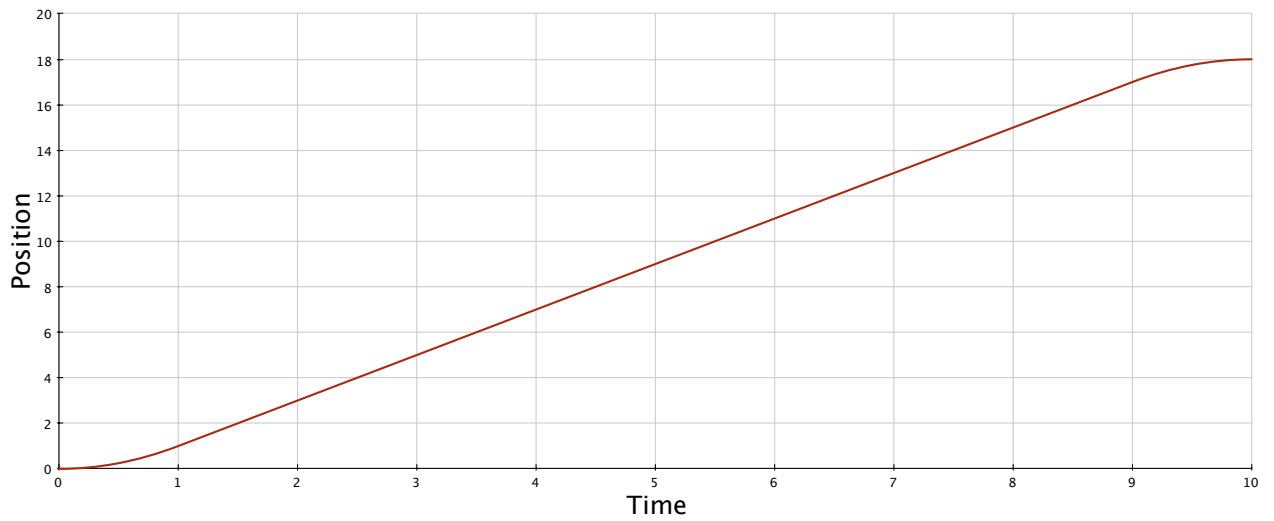
**Sketch the missing motion graphs.** Pay particular attention to shape and inflection points. Change the values of the vertical axis if necessary.



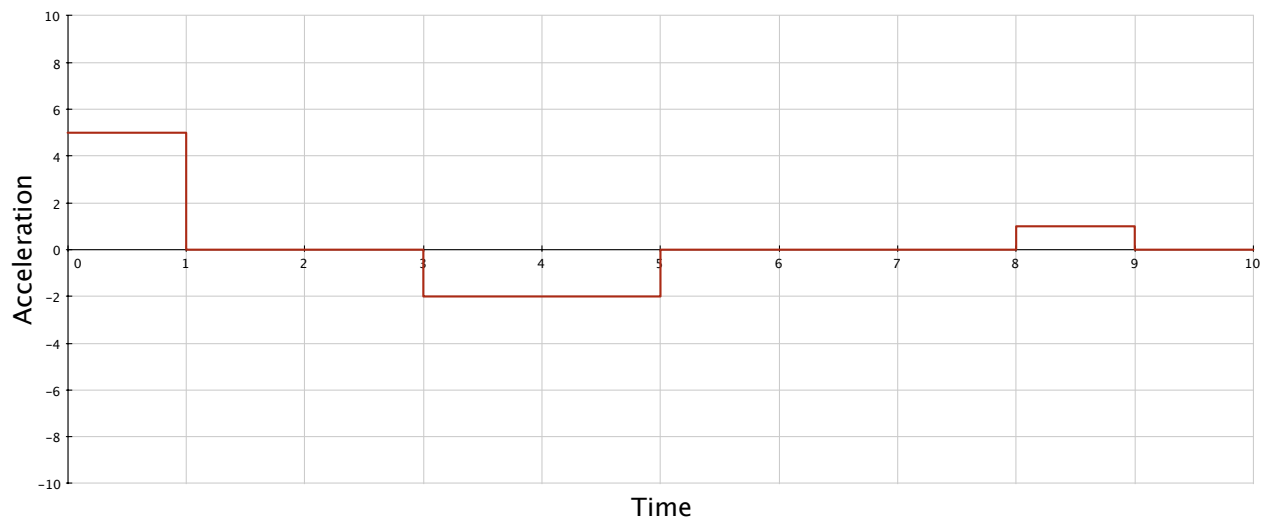
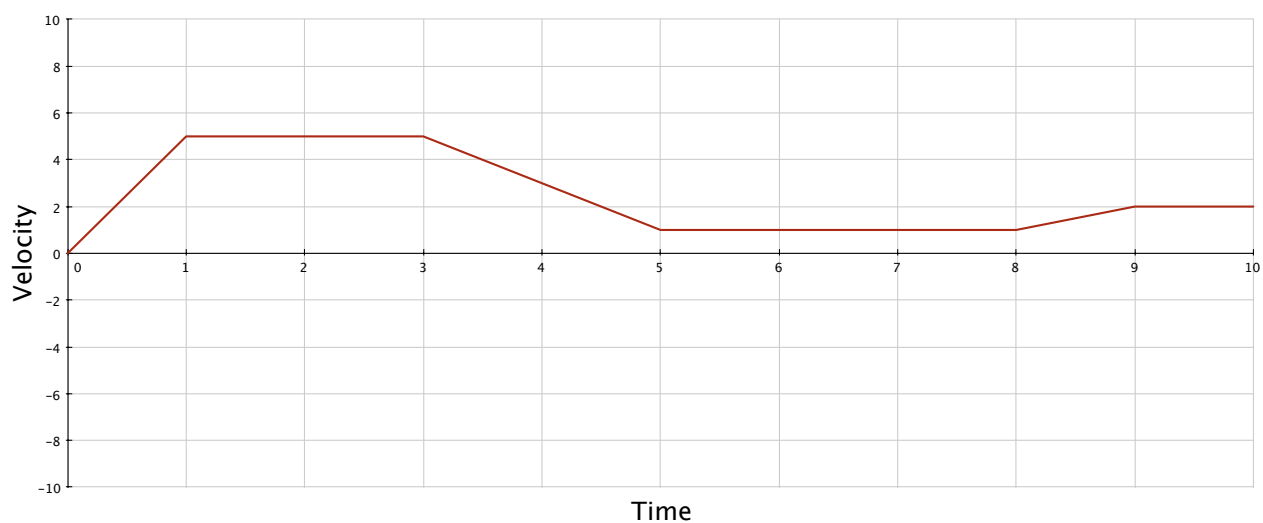
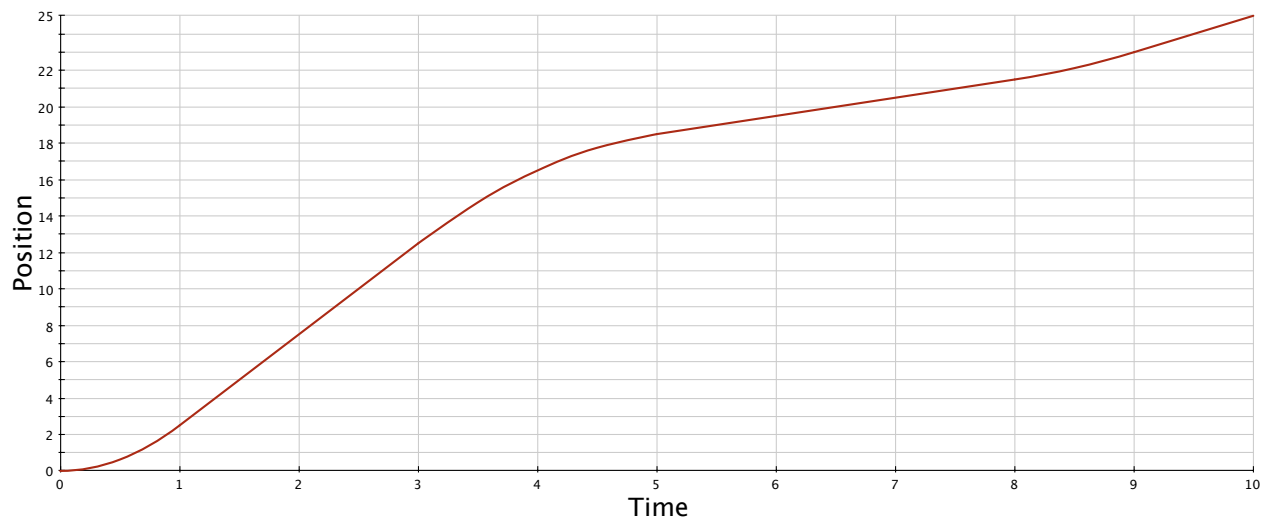
**Sketch the missing motion graphs.** Pay particular attention to shape and inflection points. Change the values of the vertical axis if necessary.



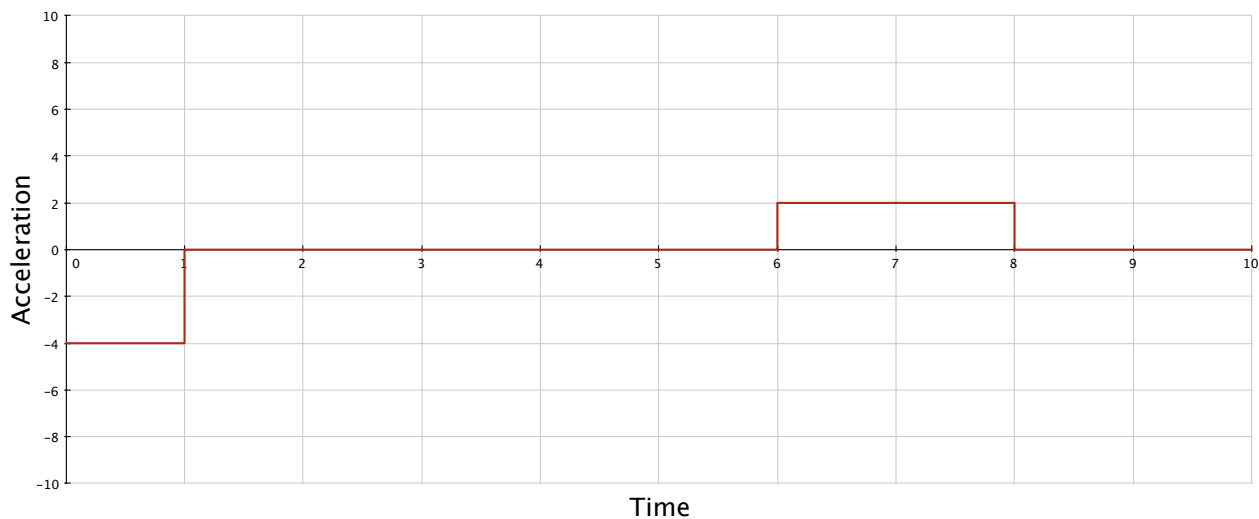
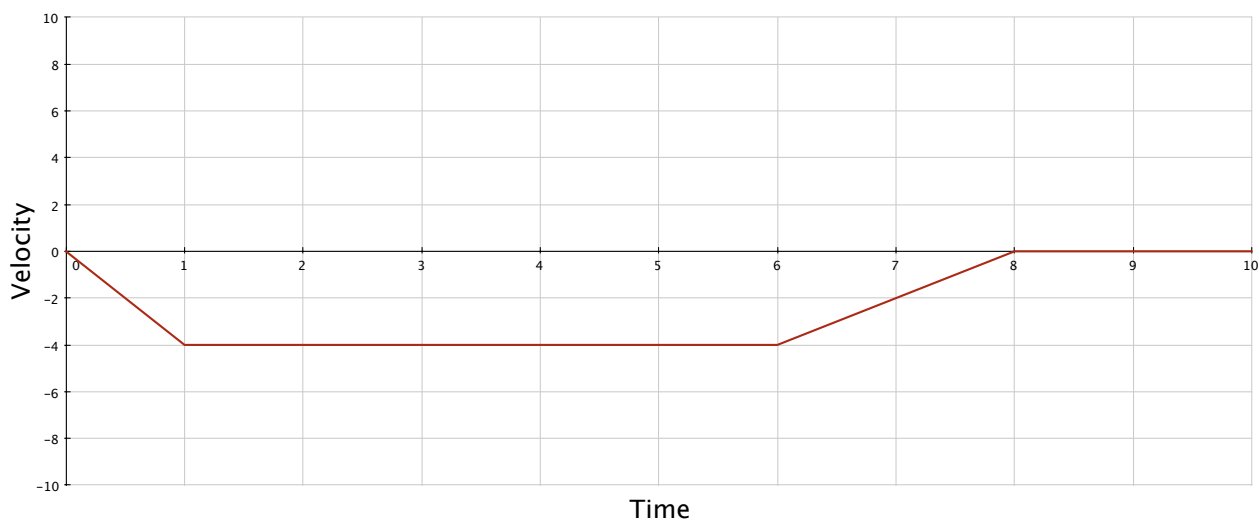
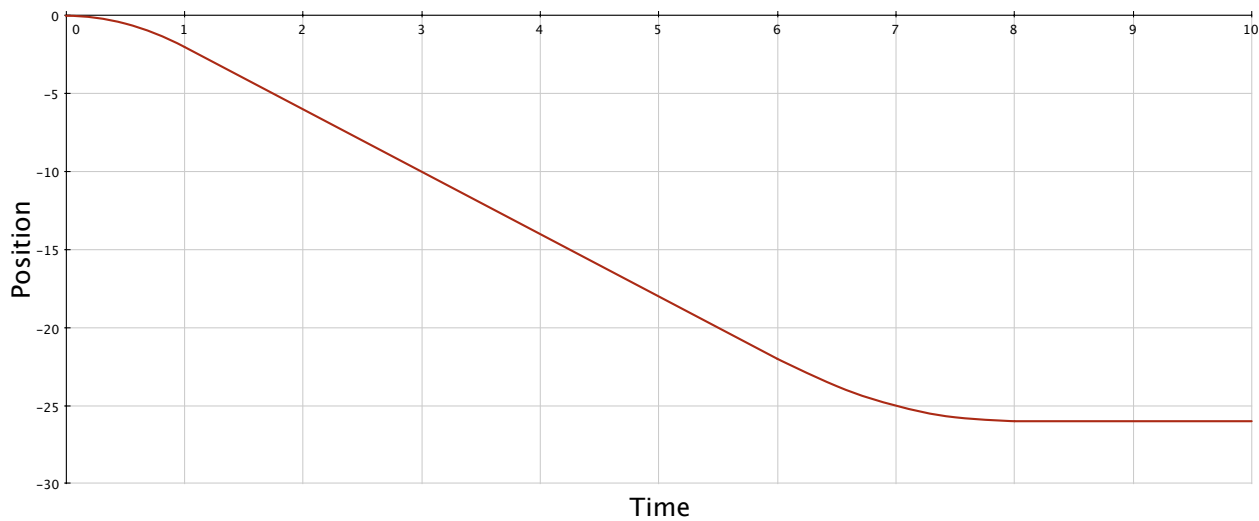
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