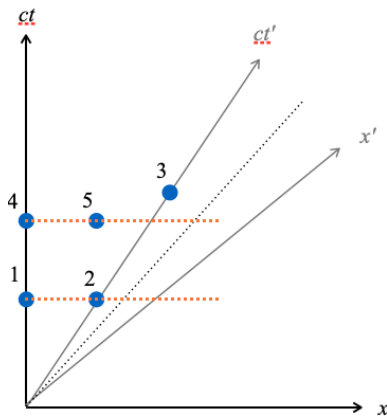


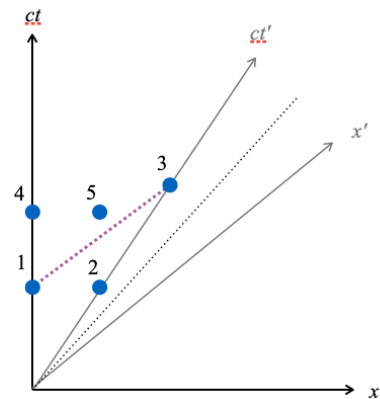
1. a) Which pairs of events (if any) are **simultaneous** in the **unprimed frame**?

Solution Events that are connected by a line parallel to the x axis. Event 1 & Event 2, Event 4 & Event 5



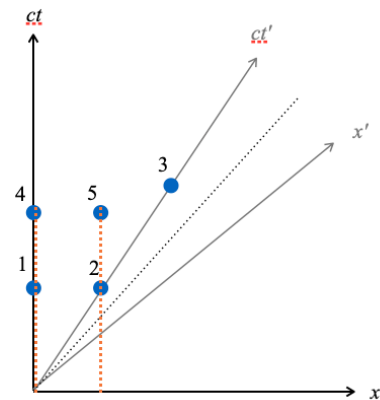
- b) Which pairs of events (if any) are **simultaneous** in the **primed frame**?

Solution Events that are connected by a line parallel to the x' axis. Event 1 & Event 3



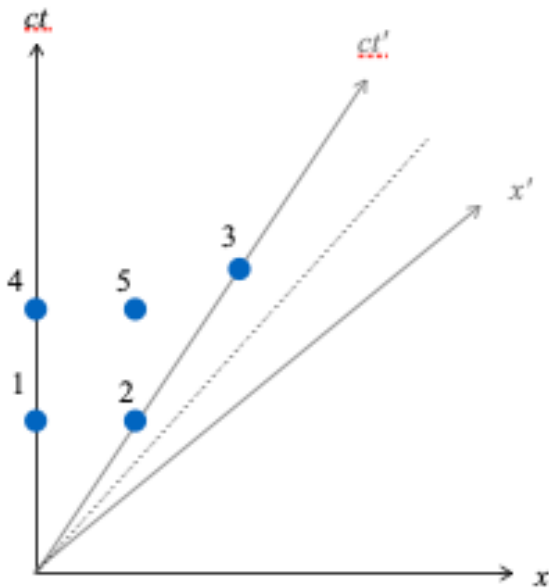
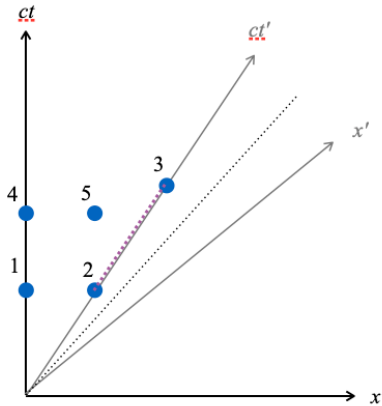
- c) Which pairs of events (if any) are **colocated** in the **unprimed frame**?

Solution Events that are connected by a line parallel to the ct axis. Event 1 & Event 4, Event 2 & Event 5



- d) Which pairs of events (if any) are **colocated** in the **primed frame**?

Solution Events that are connected by a line parallel to the ct' axis. Event 2 & Event 3



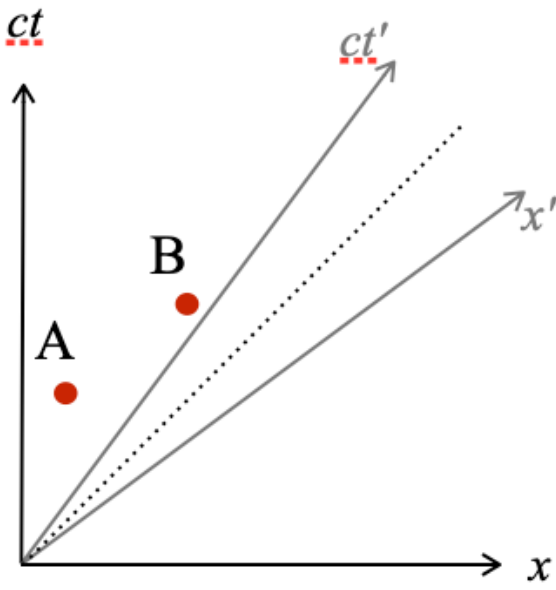
2. For each of the figures, answer the following questions:

a) Which event occurs **first** in the **unprimed** frame?

Solution To find the order of events in the **unprimed** frame, I draw lines parallel to the x axis and see where these lines intersect the ct axis.

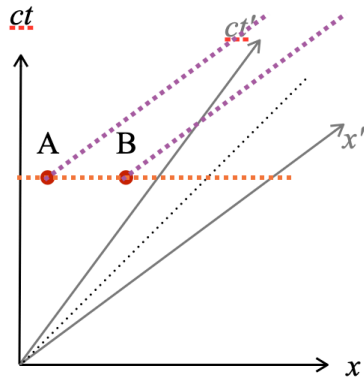
b) Which event occurs **first** in the **primed** frame?

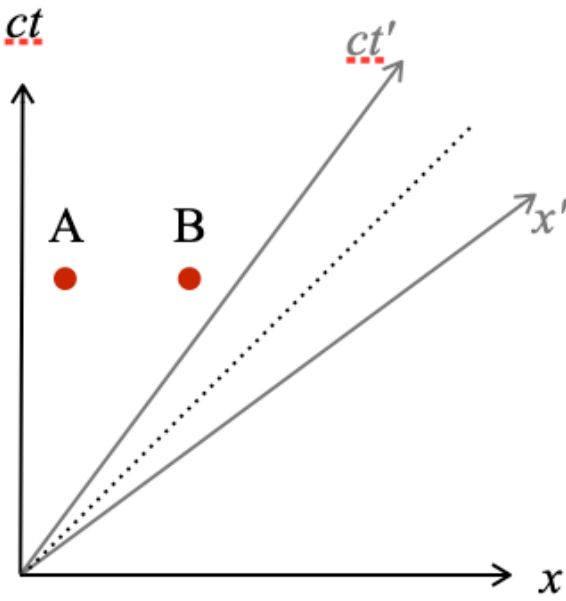
Solution To find the order of events in the **primed** frame, I draw lines parallel to the x' axis and see where these lines intersect the ct' axis.



i.

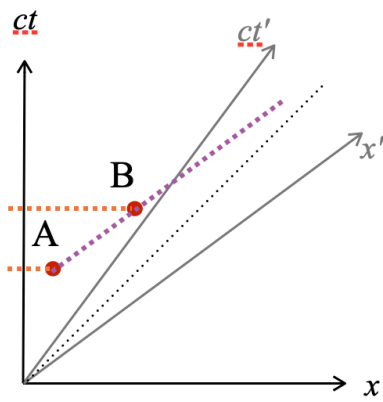
Solution Event A occurs first in the unprimed frame.
 Event A & Event B are simultaneous in the primed frame.

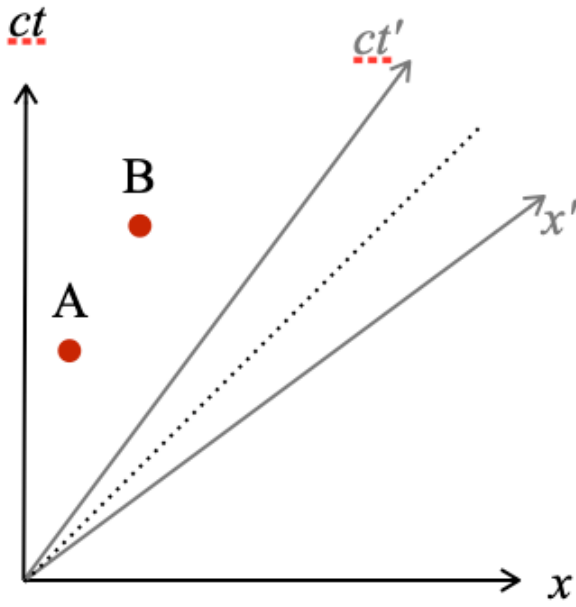




ii.

Solution Event A & Event B are simultaneous in the unprimed frame. Event B occurs first in the primed frame.





iii.

Solution Event A occurs first in the unprimed frame. Event A also occurs first in the primed frame.

