

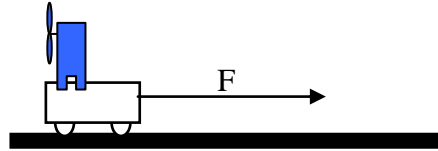
Interactive Demonstration
Name _____

Block _____

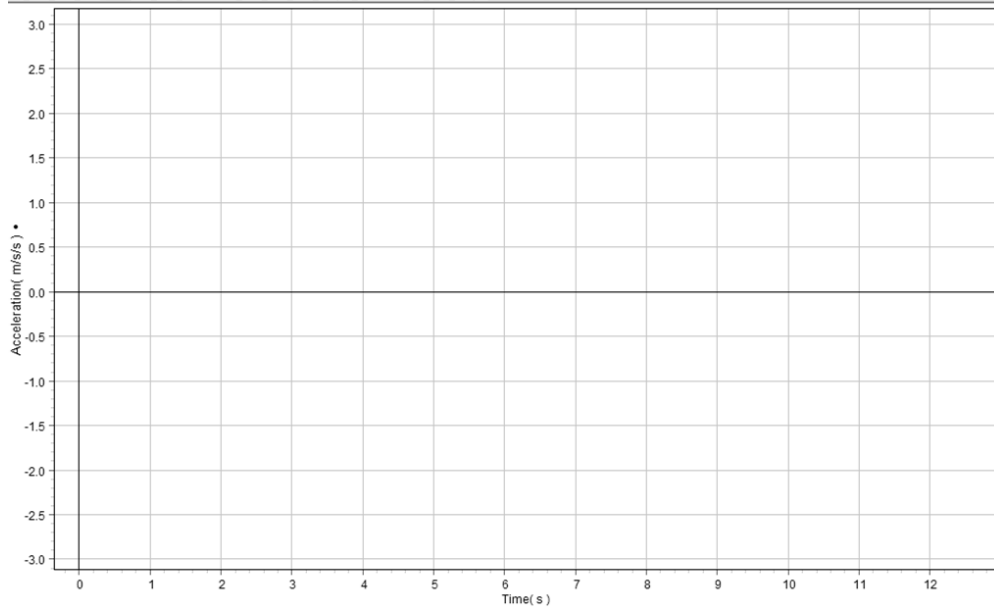
Friction
Block _____

----- Review -----

The fan provides a constant force on the cart as shown in the diagram.



Predict the acceleration of the cart.

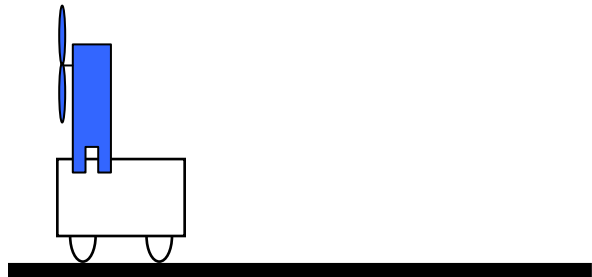


In a different color draw the results of the review demonstration.

----- Demonstration -----

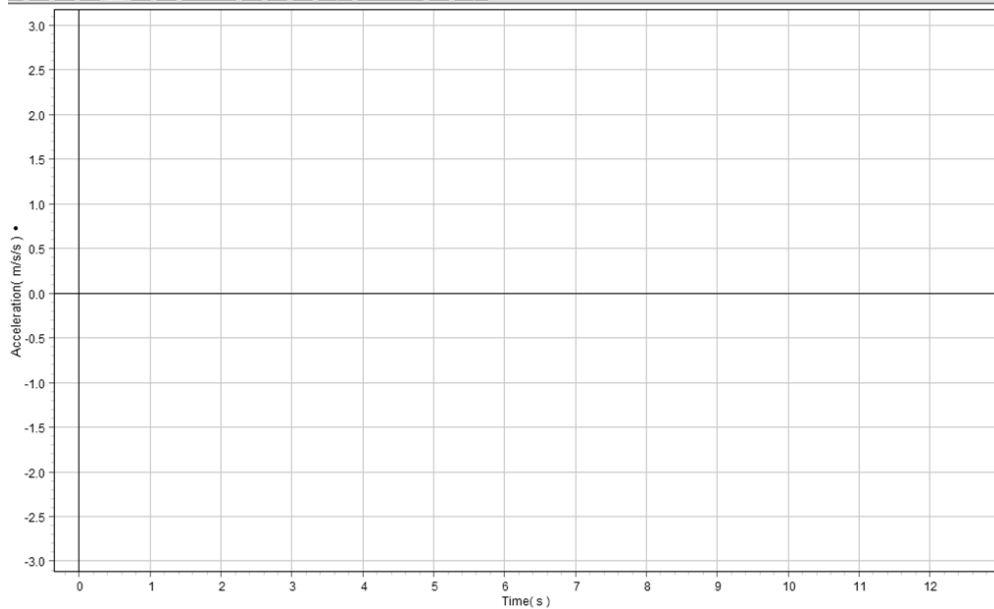
Now there will be friction on the cart.

Draw the free-body diagram of the situation.



----- Predictions -----

First draw in the results from the review demonstration then predict the acceleration of the cart. Be sure to label which is which on your graph.



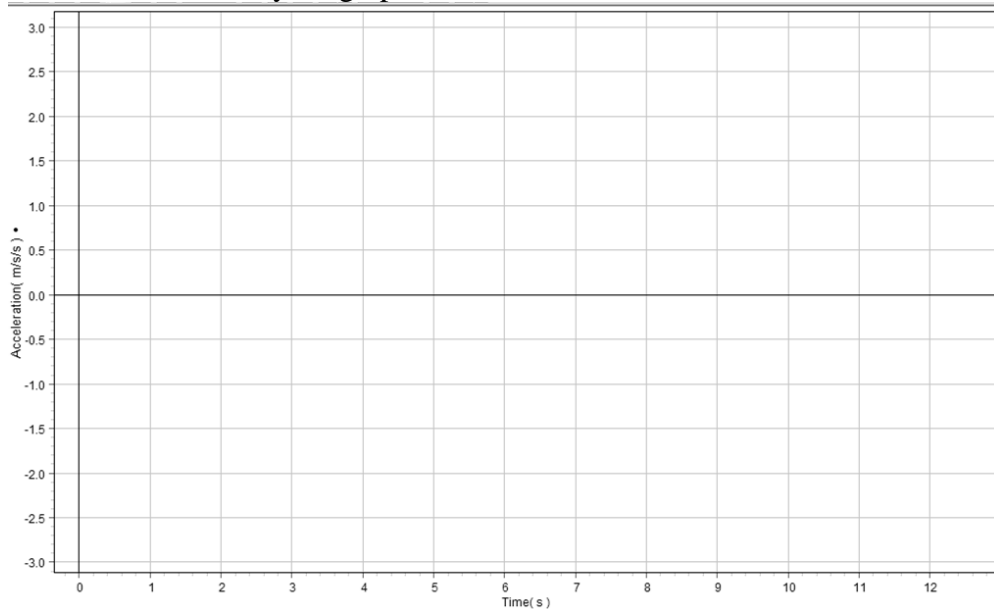
----- Partner Discussion -----

----- Class Discussion -----

----- Physics Speaks -----

----- Results -----

First draw in the results from the review demonstration then the acceleration of the cart. Be sure to label which is which on your graph.

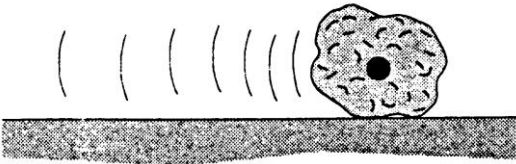
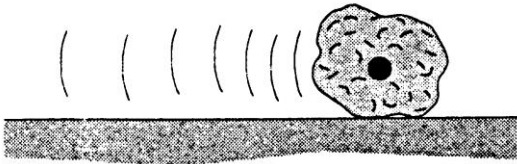
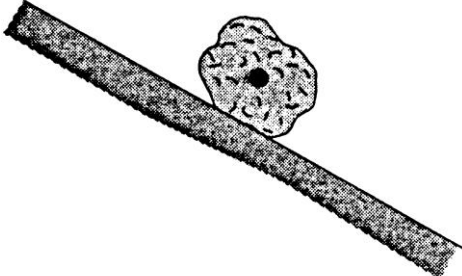
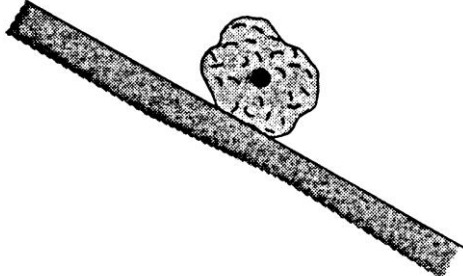


Why were the accelerations different?

----- Extend 1 -----

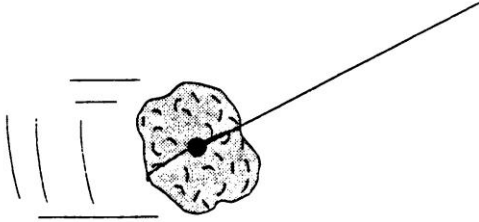
When completing each of the free-body diagrams use this notation:

F_G = weight, T = tension, F_f = friction, F_n = normal force, a = acceleration

<p>Prediction Situation A LM-13. Rock is decelerating because of kinetic friction.</p> 	<p>Result Situation A LM-13. Rock is decelerating because of kinetic friction.</p> 
<p>Prediction Situation B LM-3. Friction prevents sliding.</p> 	<p>Result Situation B LM-3. Friction prevents sliding.</p> 

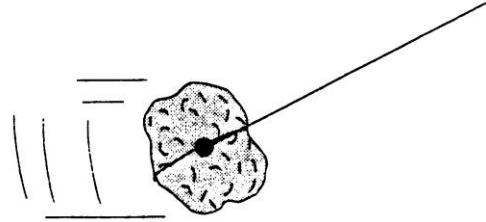
Prediction Situation C

LM-18. Rock is tied to a rope and pulled so that it accelerates horizontally at $2g$.
No friction.



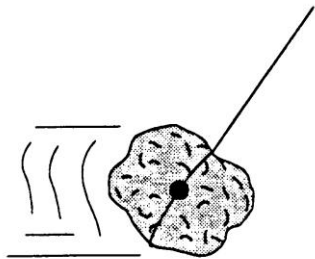
Result Situation C

LM-18. Rock is tied to a rope and pulled so that it accelerates horizontally at $2g$.
No friction.



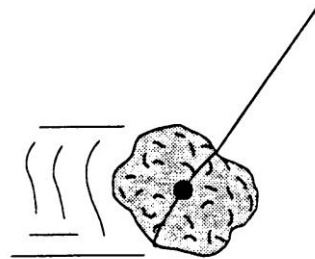
Prediction Situation D

LM-17. Rock is tied to a rope and pulled so that it moves horizontally at constant velocity. (There must be friction.)



Result Situation D

LM-17. Rock is tied to a rope and pulled so that it moves horizontally at constant velocity. (There must be friction.)



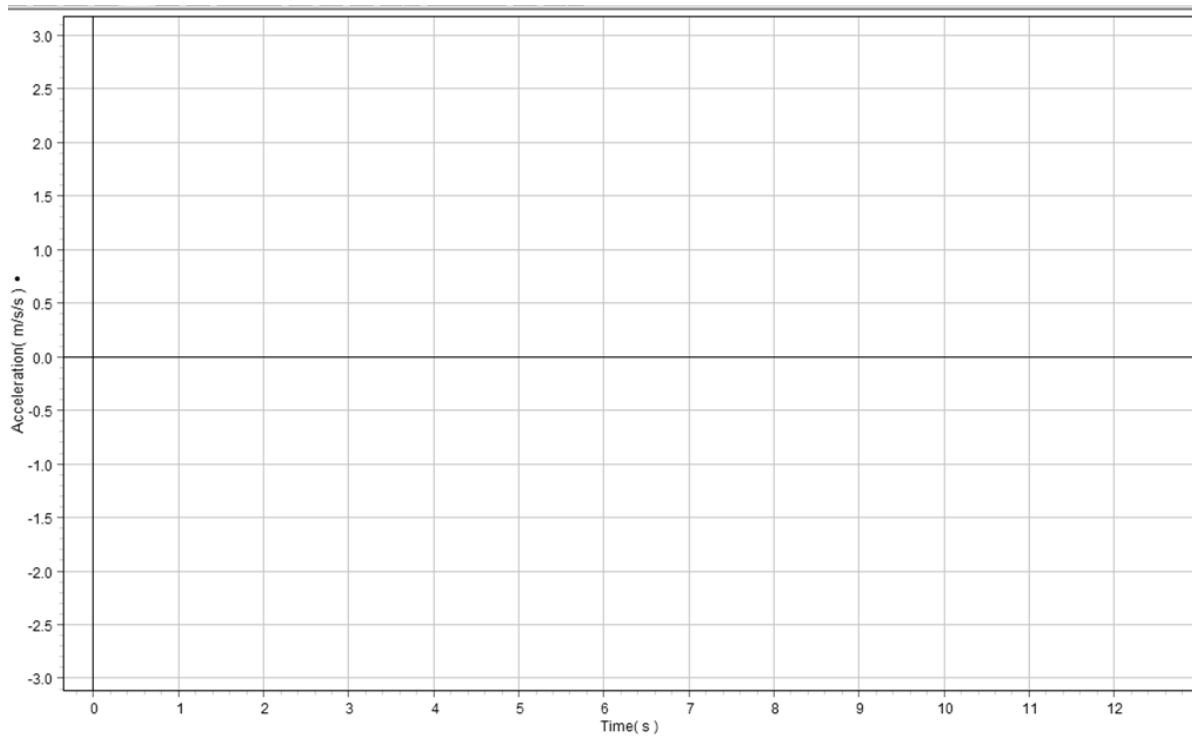
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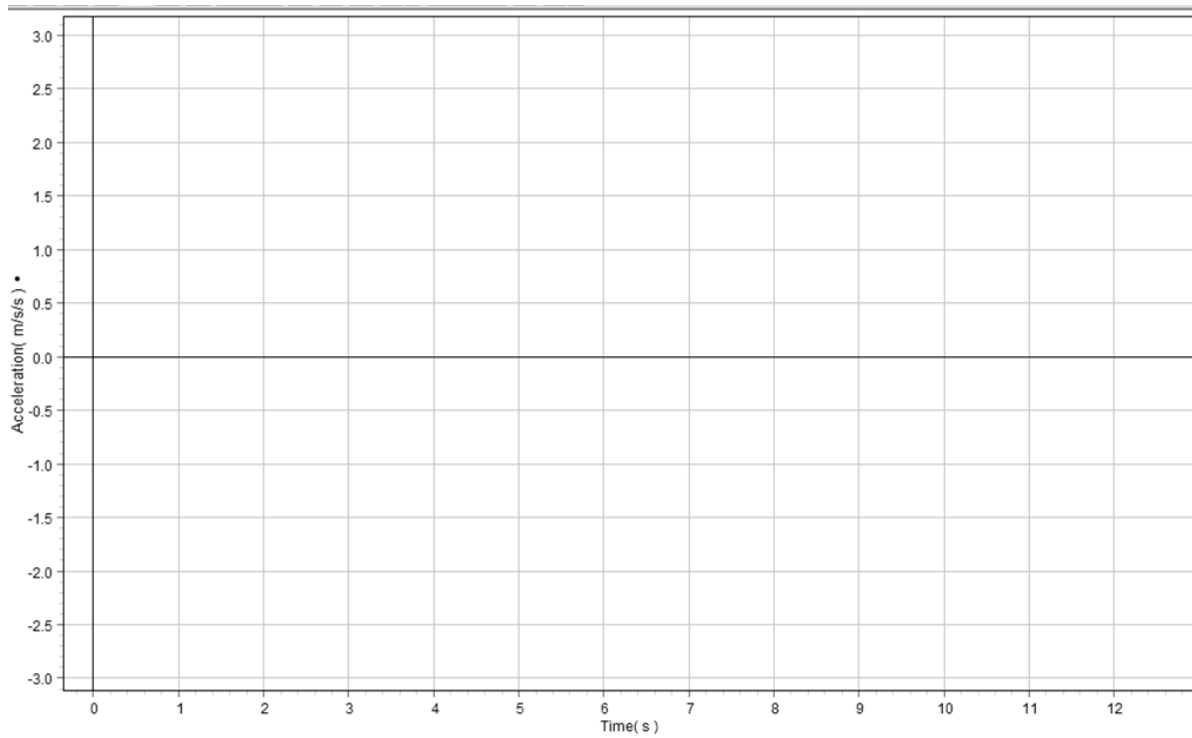
Friction
Block _____

----- Extend 2 -----

Predict the acceleration of the cart during this demonstration.



Draw the results on the demonstration.



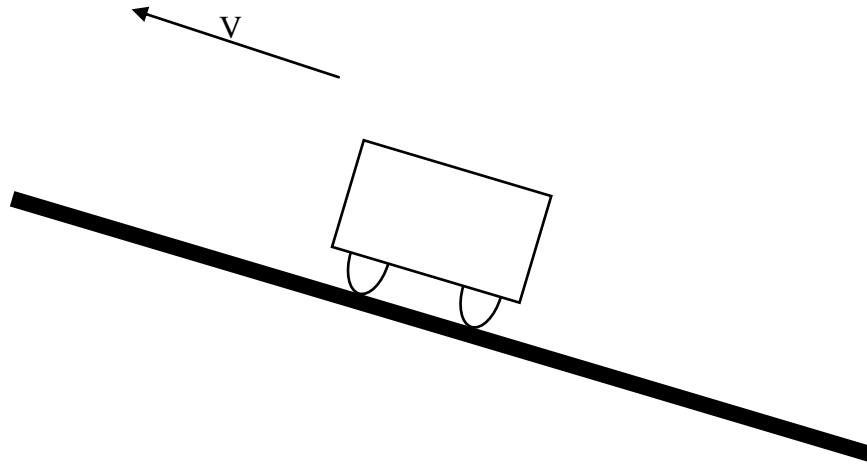
Interactive Demonstration
Name _____

Block _____

Friction
Block _____

Draw the free-body diagram of the cart before and after the change in direction.

Before



After

