STANDARDS: HS.P.F.25 _____ HS.P.F.26_____ HS.P.F.29_____HS.P.F.30_____ HS.P.F.33_____

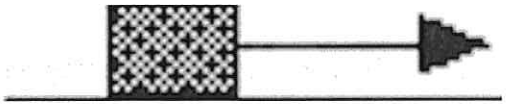
Name: Answer Key Period: _____ Date: _____

HS.P.F.25, HS.P.F.26, HS.P.F.29, HS.P.F.30, HS.P.F.33 Assessment

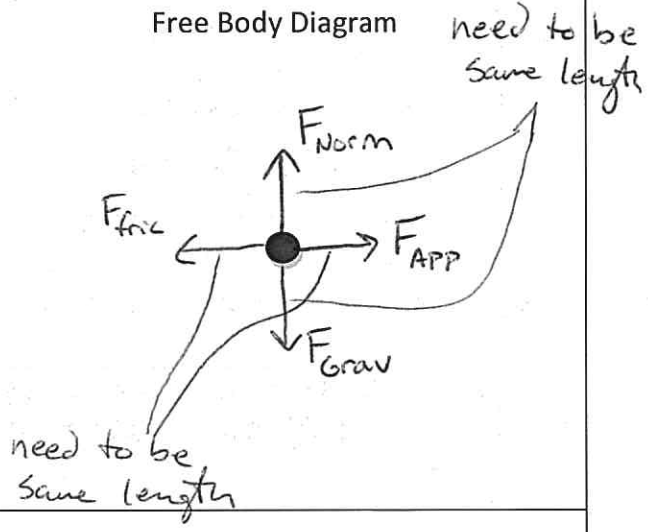
1. In each of the following situations, represent the object with a dot. Draw and label all the forces acting on the object.

HS.P.F.26	I can draw a properly labeled free body diagram showing all forces acting on an object.	
HS.P.F.29	My free body diagrams look qualitatively accurate (balanced or unbalanced in the correct directions, relative sizes of forces)	

a. The object is traveling at a constant velocity to the right. It is pulled by a force parallel to the surface. The surface has friction.

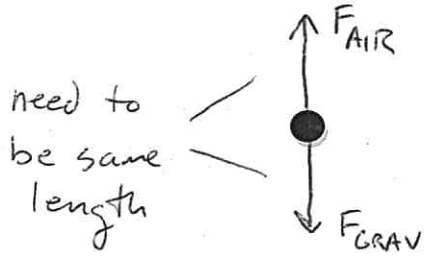


Free Body Diagram



b. The object is falling at a constant velocity

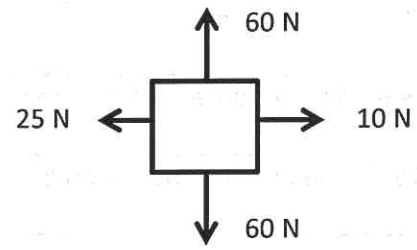
Free Body Diagram

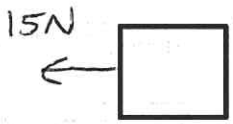


2. In each of the following situations draw a free body diagram that only represents the net force acting on the object.

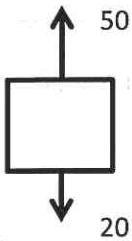
HS.P.F.25	I can draw a force vector addition diagram for an object representing the net force on the object.	

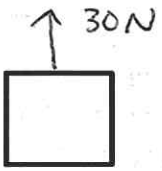
a.





b.

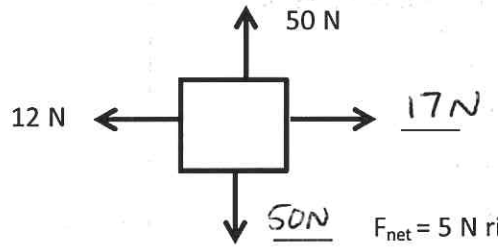




3. For each of the following, what are the unknown forces if you know the Net Force on these objects?

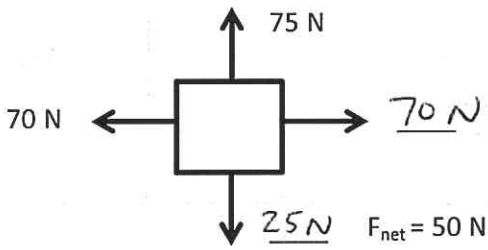
HS.P.F.33	I can use Newton's first law to quantitatively determine the forces acting on an object moving at a constant velocity.	

19.

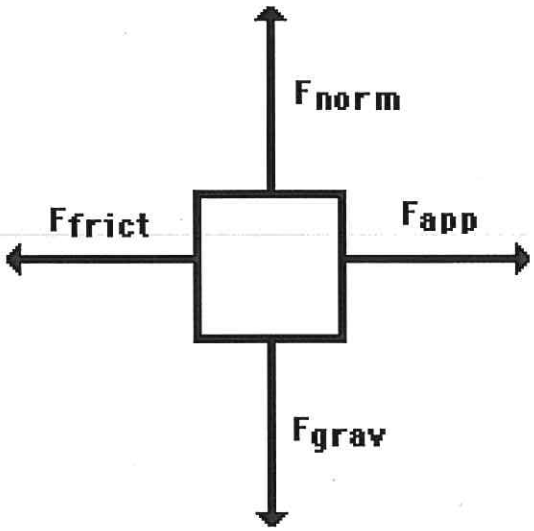


F_{net} = 5 N right

20.



F_{net} = 50 N up



4. Isaac and Galileo are arguing about the above Free Body Diagram where all the arrows are the same length. Isaac says that the object is at rest. Gaileo says the object is moving with a constant velocity to the right. Explain why <u>both</u> are correct.

HS.P.F.30	I can relate balanced forces to an object's constant motion	

Isaac is correct and Gaileo is correct because the diagram has balanced forces.

When forces are balanced an object can be at rest and stay at rest. Also when forces are balanced an object in motion can stay in motion in a straight line with a constant velocity.

The object could be moving to the right because friction always opposses motion.