Balanced and Unbalanced Forces

When an object experiences _____ forces, the object remains at rest and does not move.

When an object experiences _____ forces, the object will

move in the _____ of the _____ force.

TUG-O-WAR 1

_____ vs._____

Diagram with Vectors:

TUG-O-WAR 2

_____ vs._____

Diagram with Vectors:

TUG-O-WAR 3

_____ vs._____

Diagram with Vectors:

Balanced and Unbalanced Forces

If forces are balanced then an object is either stationary (not moving) or moving at a constant (unchanging) speed.

If forces are unbalanced then an acceleration (getting faster) or deceleration (getting slower) occurs.

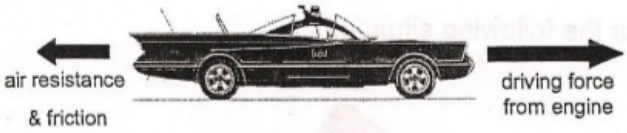
Balanced or unbalanced?

Take a look at the following situations. Are the forces *balanced* or *unbalanced*?

Example 1

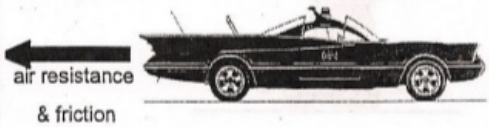
The forces are _____

Example 2



The forces are _____

Example 3



The forces are _____

What is happening to the speed of the car in each example?

Example 1:_____

_____

Example 2:_____

_____

Example 3:_____

_____

Question: Is it possible for all of the forces on an object to be equal but the object still be moving?