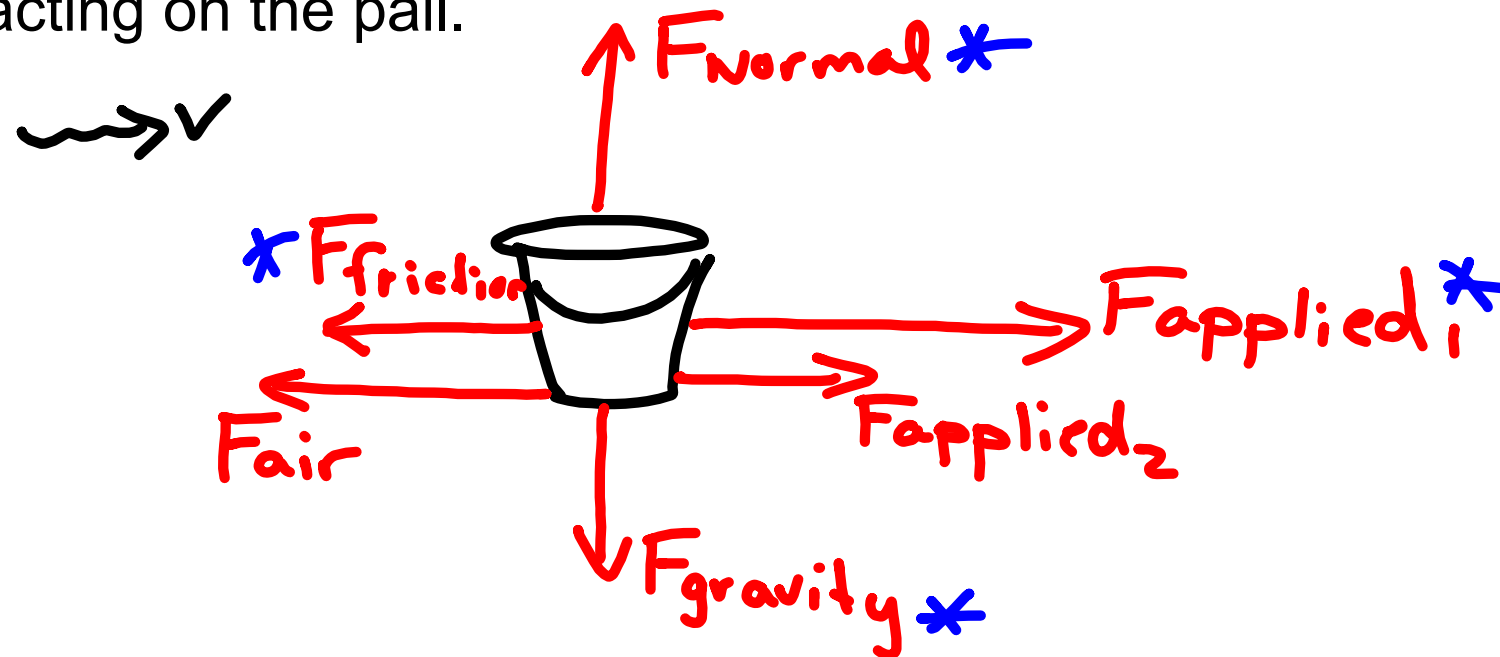


## Free Body Diagrams

A Free Body Diagram (FBD) is a drawing of just the object being analyzed, not the entire situation. The diagram shows all the forces acting on that object.

Example: A pail is pushed across the floor. Show all the forces acting on the pail.

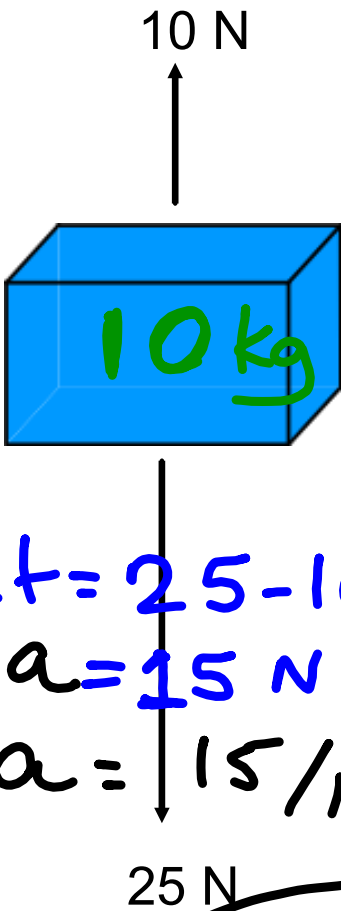


## Net Forces

The net force is the overall force acting on an object when all the components are added together.  $\sim$  Sum of all forces.  
 $\sim = ma$

Example: Find the net force in the following scenarios.

a.

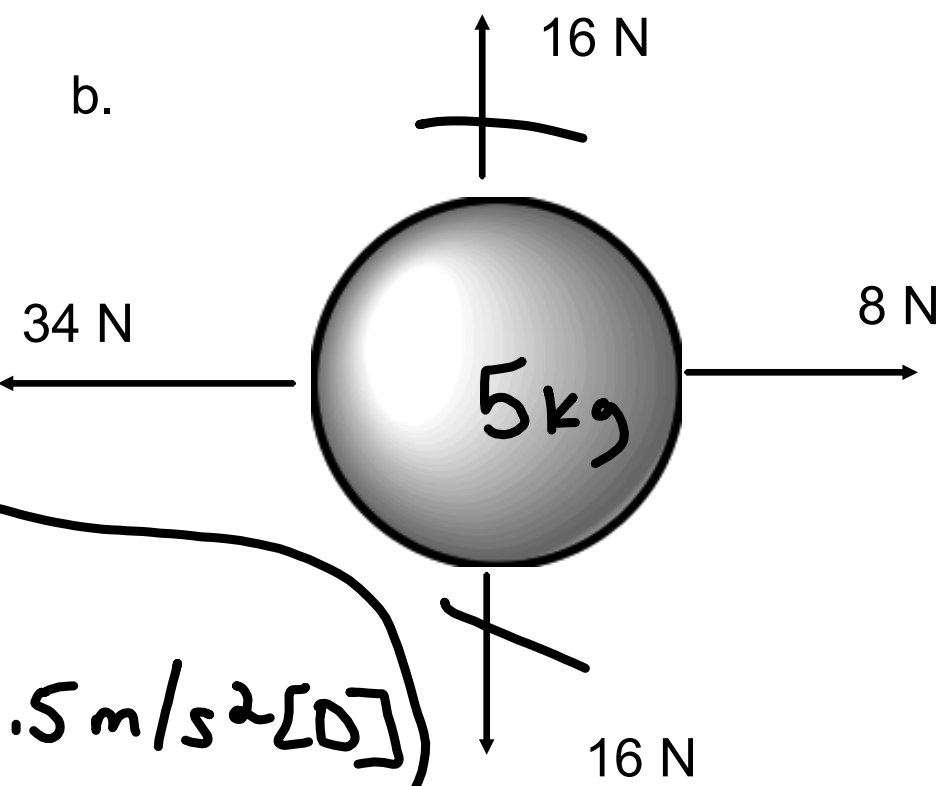


10 N

10 kg

25 N

b.



16 N

5 kg

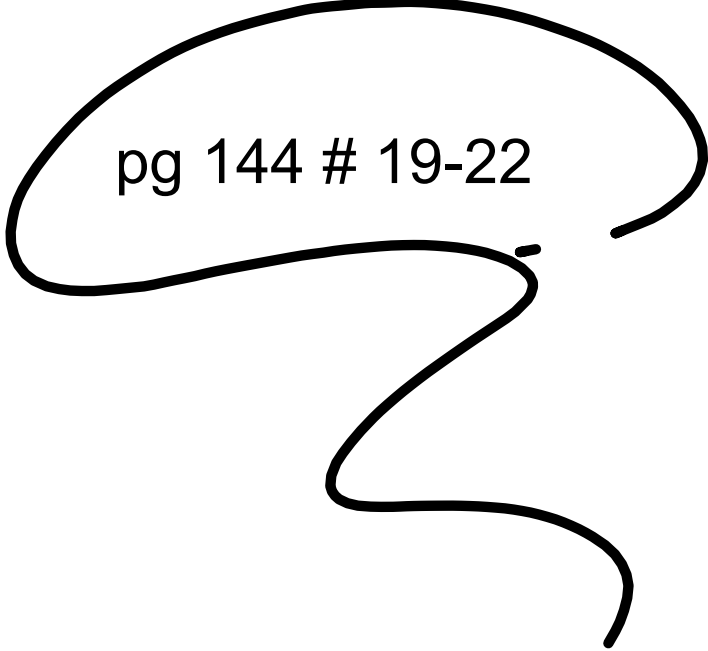
34 N

8 N

16 N

$F_{net} = 25 - 10$   
 $ma = 15 \text{ N [D]}$   
 $a = 15 / 10 = 1.5 \text{ m/s}^2 \text{ [D]}$

$F_{net} = 34 - 8$   
 $ma = 26 \text{ N [L]}$   
 $a = \frac{26}{5}$   
 $= 5.2 \text{ m/s}^2 \text{ [L]}$

A hand-drawn speech bubble with a black outline, containing the text "pg 144 # 19-22". The bubble has a tail pointing downwards and to the right.

pg 144 # 19-22