1. For each force diagram, write the expression for the net force in the x- or y-direction. Use the directions right or up as positive. Decide if the forces appear to be balanced or unbalanced. Based on our conclusions from the investigation, describe what type of motion you expect from these forces.

FD				
Balanced?	NO	NO	Yes	NO
$F_{net\,x}$	$F_f - F_T$	$F_t - F_a$	$F_a - F_N = 0$	$F_f + F_T - F_a$
Motion?	$\vec{a}$ →	← $\vec{a}$	const $\vec{v}$ or at rest	$\vec{a}$ →

FD				
Balanced?	Yes	NO	Yes	NO
$F_{net\,y}$	$F_T - F_g = 0$	$F_N - F_g$	$F_N + F_T - F_g = 0$	$F_a - F_g$
Motion?	rest or const $\vec{v}$	$\vec{a}$ ↓	rest or const $\vec{v}$	$\vec{a}$ ↓

2. Two forces act in opposite directions on an object, F_t to the right and F_f to the left. Indicate the direction of the acceleration with a wiggly acceleration vector. Compare the size of the two forces. Draw a force diagram.

Motion Diagram				
Accel.	○	⌇⌇ (left)	→	～～→
Compare	$F_T = F_f$	$F_f > F_T$	$F_T > F_f$	$F_T > F_f$
Force Diagram	$F_f \quad F_T$	$F_f \quad F_T$	$F_f \quad F_T$	$F_f \quad F_T$

3. Each situation is described by a force diagram and an initial velocity. Draw a motion diagram for each situation.

FD				
v_I	0	left	right	right
Motion Diagram				