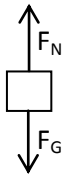
Free Body Diagrams: Use the forces in the box below and label each on your Free Body Diagram (FBD).

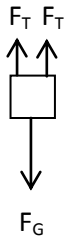
Contact Forces	Field Forces
Applied Force = F_{App} Normal Force = F_N Friction Force = F_f Tension Force = F_T Spring Force = F_S	Gravitational Force = F_G Electromagnetic Force = F_E

Use your gold sheet and the ***Rules for Drawing Free Body Diagrams (FBD)*** to complete the below practice problems. ***Problems #1 and #2 are completed as examples.***

1) A book is at rest on a tabletop.

Picture	Identify Forces	FBD
		

2) A girl is suspended motionless from the ceiling by two ropes.

Picture	Identify Forces	FBD
		

3) An egg free-falling from a nest in a tree.

Picture	Identify Forces	FBD

4) You are on a bike that is coasting to the right and slowing down.

Picture	Identify Forces	FBD

5) A rightward force is applied to a book in order to move it across a desk. The desk is not frictionless.

Picture	Identify Forces	FBD

6) A college student rests a backpack upon his shoulder. The pack is suspended motionless by one strap from one of his shoulders.

Picture	Identify Forces	FBD

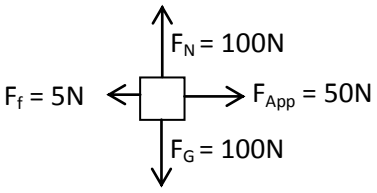
7) A force is applied to the right to drag a sled across loosely packed snow.

Picture	Identify Forces	FBD

8) You are on a bike that is coasting to the ri

Determine the *Net Force* on the object in each situation below. You must draw a FBD and label the force vectors with the size of the force. ***Problem #1 is completed as an example.***

1) You push a 100N box across the floor with a 50N force. The force of friction is 5N.

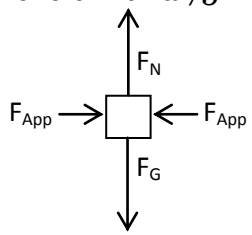


$F_{up/down} = (+100N) + (-100N) = 0N$

$F_{left/right} = (+50N) + (-5N) = +45N$

Net Force: +45N or 45N to the right

2) Anthony pushes on James from the right with a 75N force while Mr. Selent pushes on James from the left with a 75N force. James weighs 350N.



Net Force: _____

3) This time Anthony pushes on James from the right with a 100N force while Mr. Selent pushes on James from the left with a 75N force. James weighs 350N.

Net Force: _____

4) An egg is free-falling from nest. The egg weighs 10N and the force of air friction is 1N.

Net Force: _____

5) After giving a 35N box a shove (you are no longer applying a force to the box) and it slides across the floor slowing down. The force of friction on the box is 2N.

Net Force: _____

6) A college student rests a 12N backpack upon his shoulder.

Net Force: _____

7) You push a 1250N refrigerator with a 250N force but the box ***does not move***.

Net Force: _____