PreAP: due Tues., Oct 18 (Assigned: Fri., Oct 14)
Reg: due Wed., Oct 19 (Assigned: Mon., Oct 17)

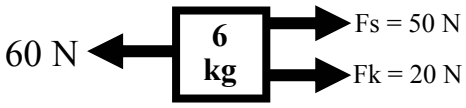
Friction 3

1. Can an object be at equilibrium if only one force is acting upon it? Why or why not?

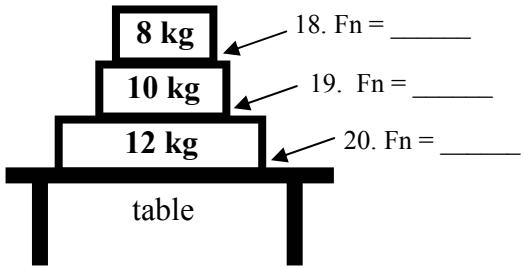
2. If a car is going downhill and feels 2500 N of force due to gravity, how much force must the brakes give to keep the car from accelerating down the hill?

4. Give the three conditions of equilibrium:

5. A 15 kg object sits on a 20 kg object. What is the normal force between the two objects?

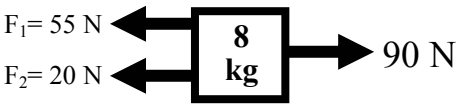


13. Find the weight of the 6 kg object.
14. How much force is necessary to move it?
15. Will the 6 kg object move?
16. If it moves how much force will oppose it?
17. If it moves, find its acceleration.



18. Fn = _____
19. Fn = _____
20. Fn = _____

21. Find the equilibrium force for this object:



22. A 12 kg object is on a surface with $\mu s = 0.35$ and $\mu k = 0.15$. Find Fs and Fk.

23. If a 50 N force pulls to the right on the above object, will it move? If no, how much more force is necessary. If yes, find the acceleration.

23. Two forces are pulling on a 10 kg object: a 15 N force pulls at 60^o N of E; a 35 N force pulls due west.
A. Find the net force on the object
(magnitude and direction again).

B. Find the acceleration of the object.

C. What force would be necessary to keep it at equilibrium?

24. (On the back)

24. *(Words can be used more than once.)* Salt water is called a s_____ because the salt is _____ed in the water. Salt water is not a chemical it is a _____ at the molecular level. The salt portion is smaller so we call it the _____, while the water portion we call the _____. To allow the salt to _____ faster we could _____ or _____ the water. When the salt water s_____ can hold more salt we say it is _____. When it has as much salt as it can hold we call it _____. If we cool the s_____ we could make it overfull, called _____, and eventually the salt will fall out to the bottom. *(BONUS ITALICS:) This solidification is called a* _____. *We could recover the salt by* _____ the water because a mixture is a _____ change, not chemical.