**Physics Chapter 4**

**Wkst: Drawing Force Diagrams** **2**

In each of the following situations, represent the object with a box. Draw and label all the forces using standard force symbols as learned in class.

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| 1. Object lies motionless on a surface. | 2. Object slides at constant speed along a Smooth (frictionless) surface. |
| 3. Object slows due to friction (rough surface). | 4. Object slides on a smooth incline. |
| 5. Friction on an incline prevents sliding. | 6. An object is suspended from the ceiling. |
| 7. An object is suspended from the ceiling. | 8. The object is motionless. |
| 9. The object is motionless. | 10. The object is motionless. |

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| 11. The object is pulled by a force parallel to the surface. The surface is rough or has friction. | 12. The object is pulled by a force at an angle to the surface. The surface is rough. |
| 13. The object is pulled upward at constant speed. |  |
| 14. The object is falling (no air resistance). | 15. The object is falling at constant (terminal) velocity. |
| 16. The ball is rising in a parabolic trajectory.  Do not neglect air resistance | 17. A rocket is accelerating straight upward. |
| 18. A skier is accelerating down a slope. There is friction and air resistance. | 19.A big block of mass M is attached via a string to a smaller block of mass m. A student attaches a string to block M and pulls everything to the right along the rough surface. Both blocks travel at constant velocity.    Do force diagrams for each block separately. |