**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.   |