**REC 3.12: Friction and Traction Name:**

**Instructions: Type your answers in bold or a different color font.**

1. \_\_\_\_\_\_\_\_\_\_\_ is a vital force in the natural world that demands special consideration in the world of robotics.
2. \_\_\_\_\_\_\_\_\_\_\_ is adhesivefriction, achieved when enough friction is present to cause surfaces to adhere.
3. Are there any frictionless materials?
4. Acceleration can only be achieved if the force or forces causing it exceed the effects of friction. In other words, only net forces produce \_\_\_\_\_\_\_\_\_\_\_\_.
5. Friction is dependent upon:
6. What is the normal force?
7. What is center of gravity?
8. Consider a tripod. What amount of force is on each of the legs?
9. What is the formula for friction?
10. What are the two types of friction that occur in nature? Define each.
11. The coefficient of static friction (µs)describes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
12. The coefficient of kinetic friction (µk)describes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
13. Too much friction will \_\_\_\_\_\_\_\_\_\_. Too little friction will allow your robot to \_\_\_\_\_\_\_\_\_\_\_\_\_\_ excessively, going off course or getting pushed around by other robots.
14. If the wheel is slipping or skidding across the surface, then **\_\_\_\_\_\_\_\_\_\_\_\_\_** is present at the point of contact.
15. If the wheel is to roll, \_\_\_\_\_\_\_\_\_\_\_\_ must exist at the point of contact so there can be no slipping between the wheel and the ground.