**Force diagrams and problem solving**

1. Draw the force diagram
2. Sum up the forces in the x and y. Draw the components as needed.

∑Fx =

∑Fy =

Reminder: the sum of the forces = 0 if the object is at rest or moving at a constant velocity.

The sum of forces does not equal zero if the object is accelerating.

1. Fg = -9.8 N/kg \* mass or Fg\_\_ = mass

 -9.8 N/kg

 4. Solve for unknown.

Problem #1: A person is standing on a scale that has an Fn reading of\_\_\_\_\_\_\_\_\_\_N. Follow the steps above and find the mass of the person.

Problem #2: A \_\_\_\_\_\_\_\_\_\_\_ gram mass is hung from a Force probe. Find the force of tension in the string.

B. If two strings are used to support the same mass, What is the force of tension in each string?

C. What if three strings are used? (go to next page)

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Problem #4: Calculate the Force of Tension in the strings if a­\_\_\_\_\_\_\_ gram mass is suspended.

Problem #5: Find the mass of the object if the string has a tension force of \_\_\_\_\_\_\_\_\_ Newtons at an angle of \_\_\_\_\_\_\_\_ degrees relative to the “boom”.