

Name: \_\_\_\_\_

Class Period: \_\_\_\_\_

**Physics**

**Forces: Newton's Second Law HW**

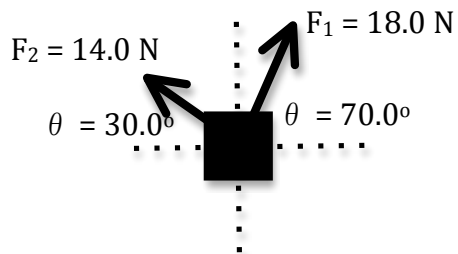
**Conceptual Questions:**

- 1) What is the difference between mass and weight?
- 2) What is the difference between the force of gravity and the acceleration of gravity?

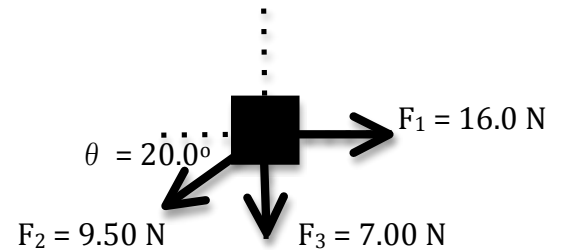
**Mathematical Questions:**

For the objects shown below, write a statement for the  $\Sigma F_x$  and  $\Sigma F_y$ , then calculate to find the  $\Sigma F_x$  and  $\Sigma F_y$ .

3)



4)



**\*See back for final question**

- 5) Four forces act on an object. Force one ( $F_1$ ) has a magnitude of 12.0 N directed to the right, force two ( $F_2$ ) has a magnitude of 8.50 N directed to the left, force three ( $F_3$ ) has a magnitude of 11.0 N directed to the left, and finally, force four ( $F_4$ ) has a magnitude of 13.0 N directed to the right.
- Draw a sketch of the object and forces mentioned above.
  - Write a statement for the  $\Sigma F$ .
  - Calculate the  $\Sigma F$  to find the net force in the x-direction.
  - Is this equilibrium or non-equilibrium?