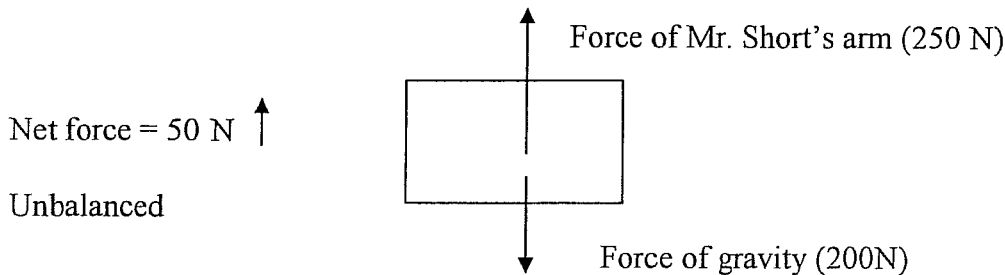


Net Force and Force Diagram Worksheet

- Directions:**
- A. Draw a free body diagram for each scenario**
 - B. Calculate the net force on the object described in each situation (don't forget direction!!!!)**
 - C. Identify whether the force is balanced or unbalanced**

Example: Mr. Short lifts a heavy box over his head with one **push** of the arm and a force of 250N. Gravity is **pulling** down the box with a force of 200N. What is the net force acting on the box?



1. Two stellar science students are pushing a box, one on each side of the box. Kenny is pushing the box with a force of 10 N to the left. Michael is pushing the box with a force of 15 N to the right. Draw a force diagram. What is the net force? Is the force balanced or unbalanced?



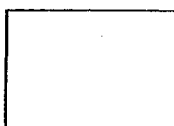
Net force = _____

2. During tug of war, Abby felt she was Supergirl and attempted to beat Thomas. Abby with one arm on the rope and the other at her side applied a 100 N force to the left, while Thomas applied a 100 N force with both hands to the right. Draw a force diagram. What is the net force? Is the force balanced or unbalanced?



Net force = _____

3. Abby finally decided to take this seriously and put both hands on the rope and applied a 150 N force to the left, while Thomas still struggled with his 100 N force to the right. Draw a force diagram. What is the net force? Is the force balanced or unbalanced?



Net force = _____

Name: _____ Period: _____ Date: _____

4. Cole and Blayne were attempting to push Hailey on a wheeled chair with enough force so Hailey would run into Mr. Young. They figured out they needed a 50 N force to run the chair into Mr. Young. Cole and Blayne were both applying force toward Mr. Young. Cole was applying a 20 N force to the left, and Blayne was applying (with all of his strength) a force of 15 N to the left.

a. Draw a force diagram.



b. What was the net force if we ignore friction?

c. Did the Hailey chair rocket hit Mr. Young?

d. How can they get it to hit him?

5. In a fourth period battle the girls were able to overcome the boys 3 times in the tug of war. The boys had 3 individuals each pulling with a total force of 30 N to the left. The 5 girls were able to pull the rope toward them with a net force of 50 N to the right.

a. Draw a force diagram.



b. What was the net force?

c. What was the minimum amount of force each of the 5 girls applied to the rope?

Name: _____ Period: _____ Date: _____

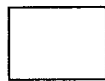
6. During 2nd period Alex was a beast. She resisted the forces applied by 5 people in her class all at once. They applied a total force of 95 N to the right, and Alex still did not move.
- Draw a force diagram.



- What was the net force?
- With how much force was Brianna pushing back?

7. During 7th period we put Fred in a box because he was talking too much. We still heard his voice through the box so we decided to push him outside. The force of friction of the ground on the box was 68 N left. Mr. Young can apply a force of 25 N to the right and every other 8th grade student can apply a force of 6 N to the right.

- Draw a force diagram.



- How many students would Mr. Young need to make the box start moving and go outside? **SHOW YOUR WORK!!!** (Think quickly, the faster we move the box out, the quicker he stops talking!)

Directions: Write two of your own force diagram/net force word problems below.