

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

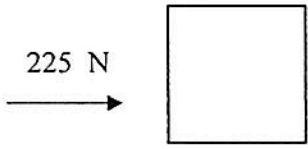
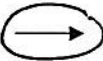

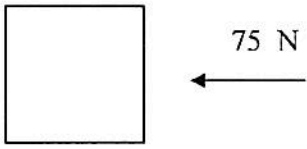


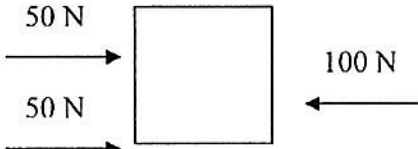


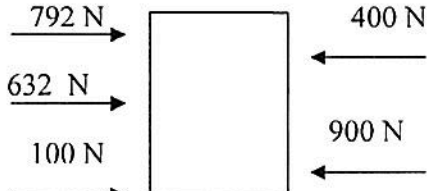


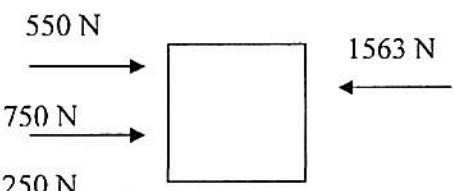


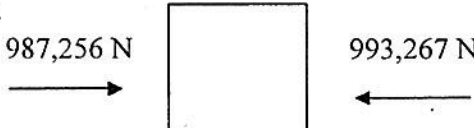


Date: \_\_\_\_\_

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

### Calculating Net Forces - Examples

Interpret each drawing of forces on the box. Calculate and write the resulting net force on the blank below the box (make sure to include the correct unit of measure). On the next blank, write the word balanced or unbalanced and circle the arrow for the direction of the resulting net force. See the example below.

Example:

<p>A.</p>  <p>225 N</p> <p>Net Force <u>225 N</u></p> <p><u>unbalance</u>  </p>	<p>B.</p>  <p>75 N</p> <p>Net Force _____</p> <p> </p>
<p>C.</p>  <p>50 N</p> <p>50 N</p> <p>100 N</p> <p>Net Force _____</p> <p> </p>	<p>D.</p>  <p>792 N</p> <p>632 N</p> <p>100 N</p> <p>400 N</p> <p>900 N</p> <p>Net Force _____</p> <p> </p>
<p>E.</p>  <p>550 N</p> <p>750 N</p> <p>250 N</p> <p>1563 N</p> <p>Net Force _____</p> <p> </p>	<p>F.</p>  <p>987,256 N</p> <p>993,267 N</p> <p>Net Force _____</p> <p> </p>

## Calculating Net Forces


Interpret each drawing of forces on the box. Calculate and write the resulting net force on the blank below the box (make sure to include the correct unit of measure). On the next blank, write the word balanced or unbalanced and circle the arrow for the direction of the resulting net force.

<p>1.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;">100 N →</div> <div style="border: 1px solid black; width: 60px; height: 60px; margin-right: 20px;"></div> <div style="margin-left: 20px;">50 N ←</div> </div> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="margin-right: 20px;">75 N ←</div> </div> <p>Net Force _____</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="width: 100px; border-bottom: 1px solid black; margin-right: 10px;"></div> <div style="display: flex; align-items: center;"> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">→</div> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">←</div> </div> </div>	<p>2.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;">545 N →</div> <div style="border: 1px solid black; width: 60px; height: 60px; margin-right: 20px;"></div> <div style="margin-left: 20px;">732 N ←</div> </div> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="margin-right: 20px;">732 N →</div> </div> <p>Net Force _____</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="width: 100px; border-bottom: 1px solid black; margin-right: 10px;"></div> <div style="display: flex; align-items: center;"> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">→</div> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">←</div> </div> </div>
<p>3.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;">61 N →</div> <div style="border: 1px solid black; width: 60px; height: 60px; margin-right: 20px;"></div> <div style="margin-left: 20px;">61 N ←</div> </div> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="margin-right: 20px;">192 N →</div> </div> <p>Net Force _____</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="width: 100px; border-bottom: 1px solid black; margin-right: 10px;"></div> <div style="display: flex; align-items: center;"> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">→</div> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">←</div> </div> </div>	<p>4.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;">1231 N →</div> <div style="border: 1px solid black; width: 60px; height: 60px; margin-right: 20px;"></div> <div style="margin-left: 20px;">489 N ←</div> </div> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="margin-right: 20px;">562 N →</div> </div> <p>Net Force _____</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="width: 100px; border-bottom: 1px solid black; margin-right: 10px;"></div> <div style="display: flex; align-items: center;"> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">→</div> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">←</div> </div> </div>
<p>5.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;">653 N →</div> <div style="border: 1px solid black; width: 60px; height: 60px; margin-right: 20px;"></div> <div style="margin-left: 20px;">1000 N ←</div> </div> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="margin-right: 20px;">352 N →</div> </div> <p>Net Force _____</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="width: 100px; border-bottom: 1px solid black; margin-right: 10px;"></div> <div style="display: flex; align-items: center;"> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">→</div> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">←</div> </div> </div>	<p>6.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;">8732 N →</div> <div style="border: 1px solid black; width: 60px; height: 60px; margin-right: 20px;"></div> </div> <p>Net Force _____</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="width: 100px; border-bottom: 1px solid black; margin-right: 10px;"></div> <div style="display: flex; align-items: center;"> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">→</div> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">←</div> </div> </div>
<p>7.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;">577 N →</div> <div style="border: 1px solid black; width: 60px; height: 60px; margin-right: 20px;"></div> <div style="margin-left: 20px;">2957 N ←</div> </div> <p>Net Force _____</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="width: 100px; border-bottom: 1px solid black; margin-right: 10px;"></div> <div style="display: flex; align-items: center;"> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">→</div> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">←</div> </div> </div>	<p>8.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;">83 N →</div> <div style="border: 1px solid black; width: 60px; height: 60px; margin-right: 20px;"></div> <div style="margin-left: 20px;">96 N ←</div> </div> <p>Net Force _____</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="width: 100px; border-bottom: 1px solid black; margin-right: 10px;"></div> <div style="display: flex; align-items: center;"> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">→</div> <div style="width: 20px; border-bottom: 1px solid black; margin-right: 5px;"></div> <div style="margin-right: 5px;">←</div> </div> </div>


## DETERMINING NET FORCE

**Directions:** 1. Write the correct net force equation for each picture. 2. Solve, and determine the direction of motion. 3. Determine if the forces are balanced or unbalanced and circle the word.


**Example**



250 N

**Net Force:**  $300\text{ N} - 250\text{ N} = 50\text{ N}$  

Circle One: Balanced or **Unbalanced**

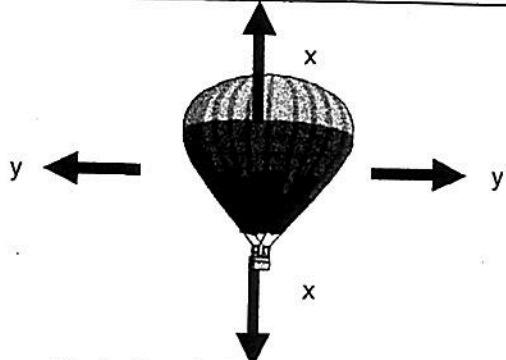


15,000 N

20,000 N

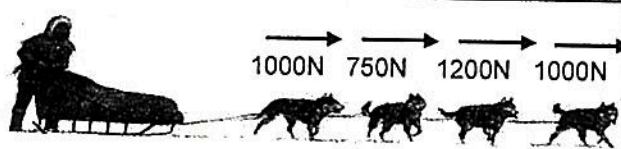
**Net Force=** \_\_\_\_\_

Circle One: Balanced or Unbalanced



**Circle One:** Balanced or Unbalanced

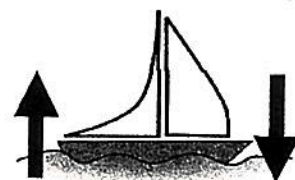
How do you know – what is your evidence?



1000N 750N 1200N 1000N

**Net Force=** \_\_\_\_\_

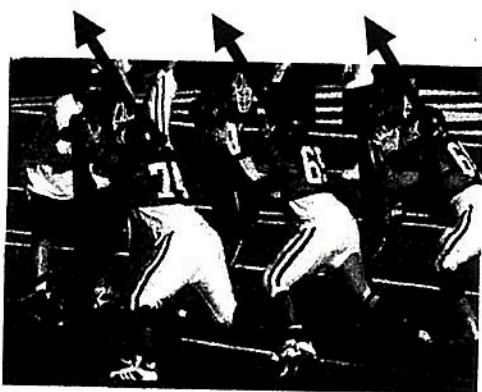
Circle One: Balanced or Unbalanced



**Circle One:** Balanced or Unbalanced

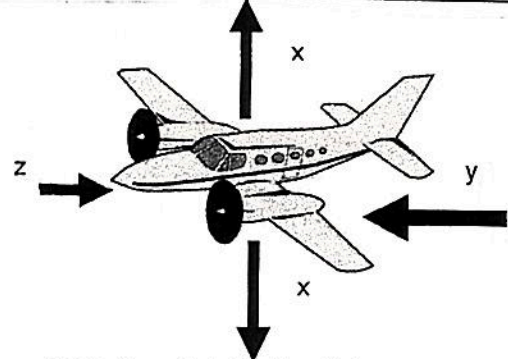
How do you know – what is your evidence?

5000 N      4500 N      6300 N



**Net Force=** \_\_\_\_\_

Circle One: Balanced or Unbalanced



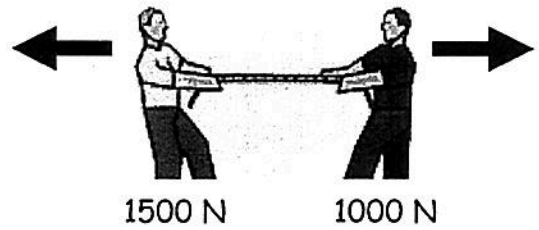
**Circle One:** Balanced or Unbalanced

For the plane to be moving forward, what must the relationship between z and y be?



1500N 2000N 2500 N 1500N 2000N

**EXAMPLES**

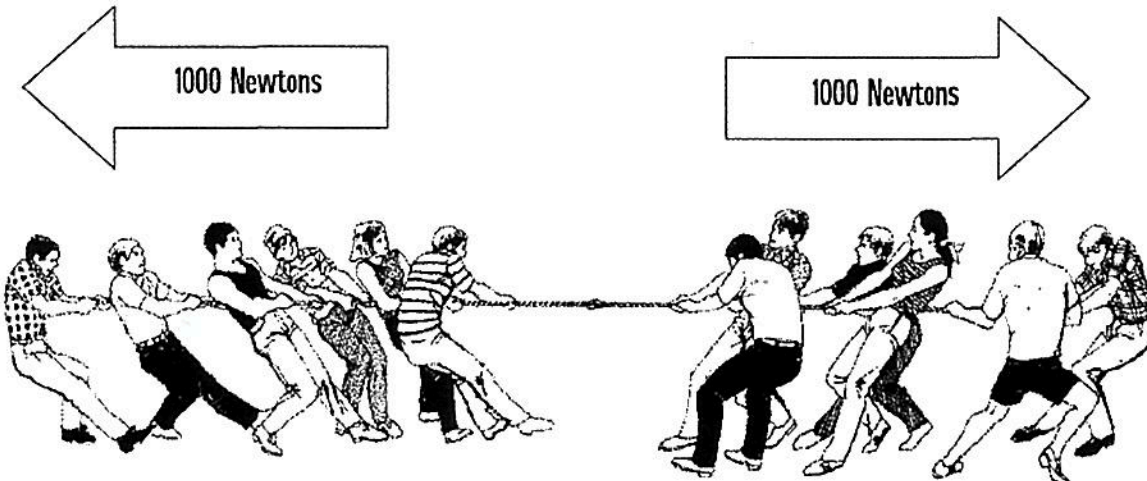


**PRACTICE PROBLEMS**

Find the net force for the given problems.

- a. 10 N  $\rightarrow$  and 15 N  $\rightarrow$  = \_\_\_\_\_ N Which direction? \_\_\_\_\_
- b. 20 N  $\leftarrow$  and 60 N  $\rightarrow$  = \_\_\_\_\_ N Which direction? \_\_\_\_\_
- c. 30 N  $\rightarrow$  and 20 N  $\leftarrow$  = \_\_\_\_\_ N Which direction? \_\_\_\_\_
- d. 40 N  $\leftarrow$  and 50 N  $\leftarrow$  = \_\_\_\_\_ N Which direction? \_\_\_\_\_
- e. 70 N down and 30 N up = \_\_\_\_\_ N Which direction? \_\_\_\_\_

Use the following picture to answer the questions. Circle the correct answer in parentheses.



1. The forces shown above are (PUSHING / PULLING) forces.
2. The forces shown above are (WORKING TOGETHER / OPPOSITE) forces.
3. The forces are (EQUAL / NOT EQUAL).
4. The forces are (BALANCED / UNBALANCED).
5. The net force is (1000 N TO THE RIGHT / 1000 N TO THE LEFT / ZERO).
6. There (IS / IS NO) motion.