

**HOMWORK - TENSION FORCES - DAY #1**

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

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

1.) The student pulls on the spring scale with a force of 50 N. How would you expect the results to be different if the spring scale were turned around? Why?

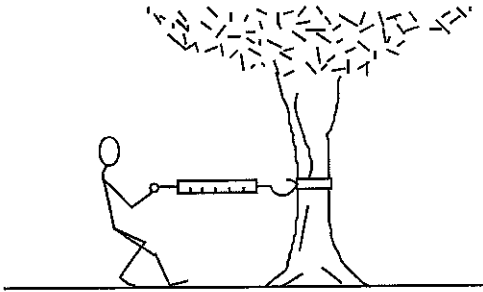


Figure 4.22

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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2.) Since a spring scale contains just a spring, why is there a small error introduced when you use a spring scale upside down to measure a force?

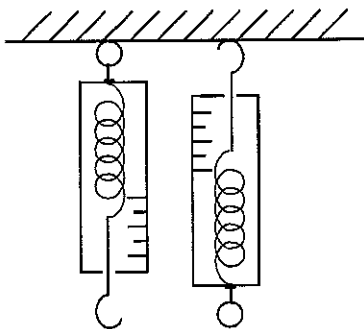


Figure 4.23

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3.) A car is pulling on a cart with a stretched rubber rope, but the cart does not move because it is connected to another car with a strong rope. How would you explain to a skeptic that *both* cars feel equal forces?

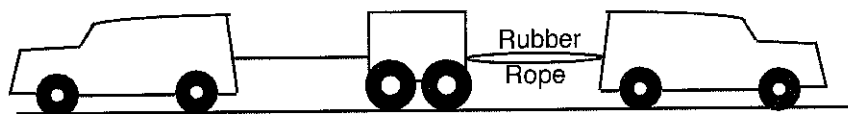


Figure 4.24

4.) Three identical springs are connected to a wall on the right and a block on the left. A person pulls on the rope so the scale reading is 450 N.

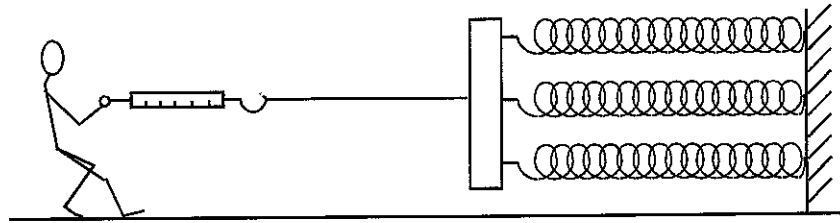


Figure 4.25

- a.) How much force is exerted on the wall by one of the springs? \_\_\_\_\_
- b.) How much force does the rope exert on the wooden block? \_\_\_\_\_

5.)

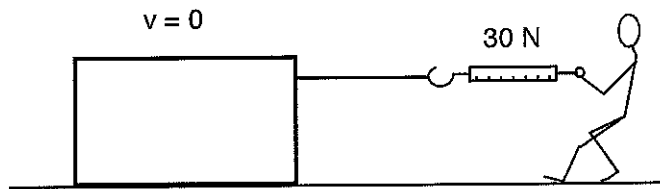


Figure 4.26

The person above is pulling on the large block but it doesn't move.

- a.) Determine the size and direction of the friction force acting on the block. \_\_\_\_\_
- b.) Determine the force of the rope pulling on the block. \_\_\_\_\_
- c.) Determine the "tension force" in the rope. \_\_\_\_\_

6.) The person is pulling up on the spring scale, but the box remains on the table. Find each of the following:

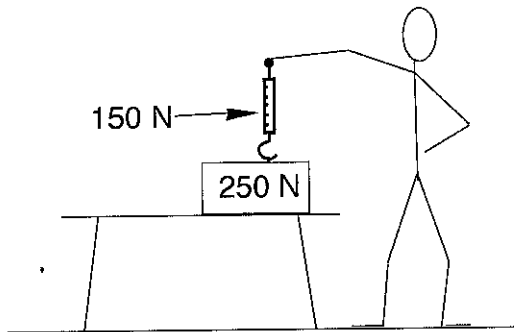


Figure 4.27

a.) Force of the table on the box.

\_\_\_\_\_

b.) Force of the box on the table.

\_\_\_\_\_

c.) Force of gravity acting on the box.

\_\_\_\_\_

d.) Force of the hand on the spring scale.

\_\_\_\_\_

e.) Force of the box on the spring scale.

\_\_\_\_\_

7.) Two people are pulling on a large block, weighing 300 Newtons, that does not move.

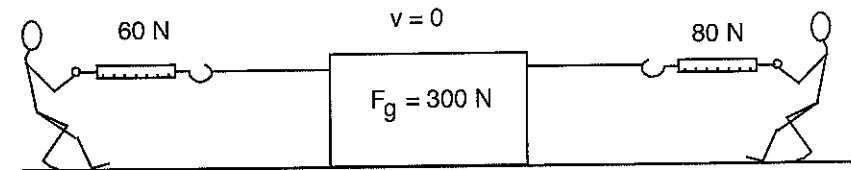


Figure 4.28

a.) Find the direction and size of the friction force from the floor acting on the block.

\_\_\_\_\_

b.) What is the "tension force" in the left rope?

\_\_\_\_\_

c.) What is the "tension force" in the right rope?

\_\_\_\_\_