

Name: _____

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Chapter 5.2 Homework
Conceptual Physics

Parent Signature: _____

Reviewing Concepts

6. What is the net force on an object in equilibrium? (0.5)

7. What is the mathematical meaning of the word *normal*? (0.5)

8. As you sit on a chair, gravity exerts a downward force on you. (1)
 - a. What other force acts on you?
 - b. What is the direction of this other force?
 - c. What do you know about the magnitude or strength of this other force?

9. If an object is in equilibrium, the forces in the x direction must add to _____, and the forces in the y direction must add to _____. (0.5)

10. You pull one end of a spring to the right. (1)
 - a. What is the action force?
 - b. What is the reaction force?
 - c. How do the directions of the two forces compare?
 - d. How do the strengths of the two forces compare?

11. What happens to a spring's force as you stretch it? (0.5)

12. What do you know about a spring if it has a large spring constant? (1)

Solving Problems

Each numbered problem is worth 1 point.

4. Find the net force on each box in the figure on page 129.

a.

b.

c.

5. A 20-kg monkey hangs from a tree limb by both arms. Draw a free-body diagram showing the forces on the monkey (Hint: Twenty kilograms is not a force!)

6. An 80-lb bag of cement is contained in a 5-lb bucket supported by a rope. Draw a free-body diagram to represent all the forces applied to the bucket. What is the tension in the rope?

7. A spring has a spring constant of 100 N/m. What forces does the spring exert on you if you stretch it 0.5 m?

8. If you stretch a spring 3 cm, it exerts a force of 50 N on your hand. What force will it exert if you stretch it 6 cm?