

Name:

Date:

Work each of the following problems. SHOW ALL WORK.

1. What force does a soccer ball apply to a person's foot if the ball experiences a 1000 N force?

2. A 20 kg box rests on a table.

a. Identify the three action-reaction force pairs involved in the box sitting on the table.

b. What force does the earth exert on the box?

c. What force does the box exert on the earth?

d. What force does the table exert on the box?



e. What force does the box exert on the table?

questions continued on next page

Unit 3E_Practice Problems

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Work each of the following problems. SHOW ALL WORK.

3. A spring is compressed between two blocks, one with a mass of 2 kg and the other with a mass of 3 kg. If the 2 kg block has an average acceleration of 6 m/s^2 when the spring acts on it, what will be the average acceleration of the 3 kg block?

4. A 30 kg girl and a 40 kg boy stand on rollerskates, face one another, and push off each other. If the boy accelerates backward with an acceleration of 6 m/s^2 , what will be the acceleration of the girl?

5. A 1000 kg car collides with a 1 mg mosquito. By what factor will the acceleration of the mosquito be greater than the acceleration of the car when they collide?

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Unit 3E_Practice Problems

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Work each of the following problems. SHOW ALL WORK.

6. What is the force on a person's hand, which is using a rope to accelerate a 5 kg block upward with an acceleration of 2.2 m/s^2 ?

