

Work each of the following problems. SHOW ALL WORK.

1. Which object would have more inertia — a 1,000 kg car or a 150 kg golf cart?

2. What would be harder to accelerate — a 4 kg shot put ball or a 2,000 kg boulder?

3. An object experiences a certain net force that causes a certain acceleration. If the net force on the object is tripled, what happens to the acceleration of the object?

4. A specific net force is applied to an object, and it causes a certain acceleration. If the same net force is applied to a new object with four times the mass, what is the acceleration of the more massive object?

Work each of the following problems. SHOW ALL WORK.

5. A box is being pulled across a horizontal surface by a 20 N force to the right.
- a. If the box moves at a constant velocity, what do you know about the forces acting on the object?
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- b. If the box moves at a constant velocity, how much force opposes the motion of the box?
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- c. If the box experiences a force of 15 N to the left, along with the 20 N force acting to the right, what is the net force on the box?
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6. A baseball bat can apply a force upwards of 18,000 N on a ball. How much force does the ball apply on the bat?
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7. When you push a box with 20 N of force, what force does the box apply back on you?
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8. A book that weighs 5 N sits on a table. What force does the table apply to the book?
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