1. A boxer leans with the punch to extend the time of contact for best results, whereas a karate expert chooses to use a quick, chopping motion for best results. Explain the difference.

2. What happens to the speed of a pursued aircraft (the one in front) when it opens fire on the plane chasing it?

3. The apple that is said to have dropped on Newton's head may have weighed about 1 N. Yet the force of impact on Isaac's head would have been considerably greater than 1 N. Explain.

4. Find the potential energy given to the 50.0 kg hammer of a pile driver when it is raised 4.00 m.

5. A 150 kg artificial satellite has a velocity of 7500 m/s. Find its momentum and its kinetic energy.

6. A bullet with a mass of 5.0 g is fired from a gun of mass 7.0 kg with a velocity of 350 m/s. What is the recoil velocity of the gun?

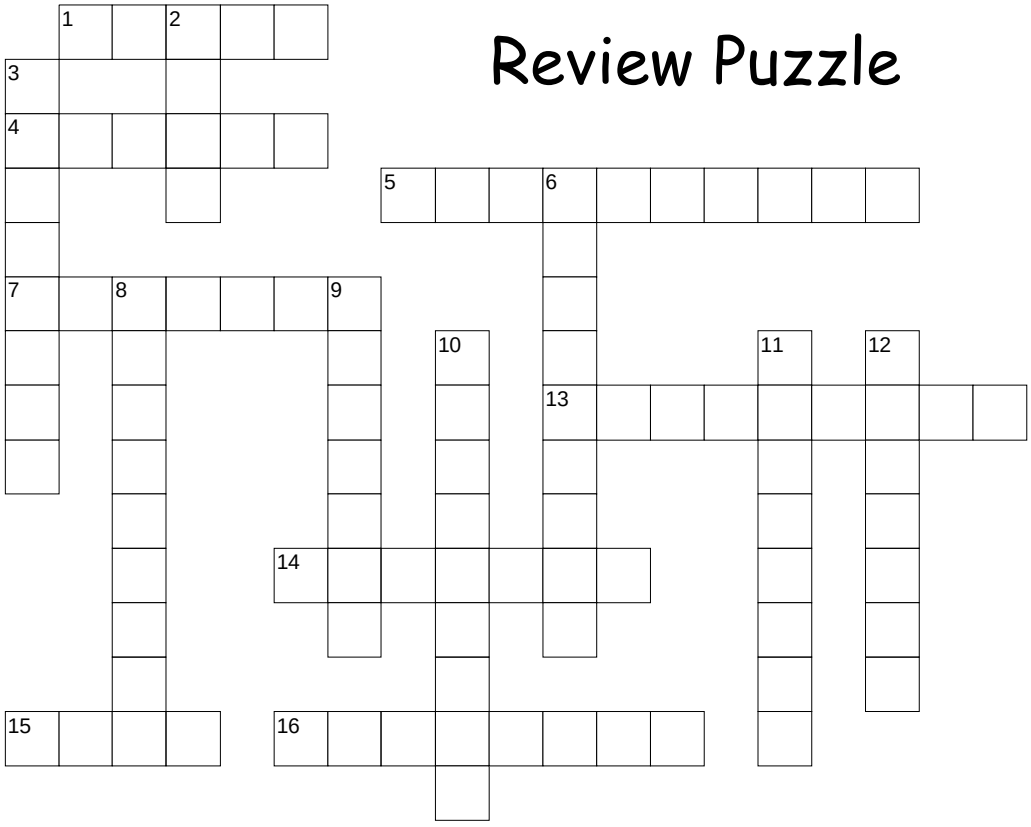
7. Both momentum and kinetic energy are calculated from mass and velocity. State two differences.

8. When a rifle is fired, the force of expanding gases inside the gun acts on the bullet. What is the advantage of having a rifle with a long barrel? Use the impulse equation to explain.

9. Use the law of conservation of momentum to explain how a rocket moves through space.

Unit 6 Review Sheet **Name_____**

Review Puzzle



Across

1 Time rate of doing work
4 Ability to do work
5 Percentage of work input that is converted to work output by a machine
7 Force multiplied by the time of application
13 Force output divided by force input is mechanical _____
14 Energy due to motion
15 A door knob is a type of wheel and _____
16 Moving inertia

Down

2 Force time displacement in the same direction
3 Weight is used as a force in calculating work only when motion is in a ____ direction
6 Collision in which objects stick and are deformed
8 Energy due to position
9 Collision in which objects bounce and no energy is lost
10 Momentum is ____ in all collisions and explosions
11 A screw is a type of _____ plane
12 A device that makes a task easier to accomplish by multiplying force