

Chapter 4 Guided Reading Section 4.1

1. Newton's Third Law says that every _____ force creates a _____ force that is equal in strength and opposite in direction.
2. Newton's Second Law states that acceleration is directly proportional to _____ and inversely proportional to _____.
3. Define momentum.
4. Write the equation used to calculate momentum.
5. What are the SI units for momentum?
6. What is impulse?
7. Write the equation relating impulse, force, and time.
8. State the Law of Conservation of Momentum.

Guided Reading Section 4.2

20. _____ is a quantity that measures the ability to cause change in a physical system.
21. What is the SI unit of energy?
22. One joule is equal to applying a force of _____ over a distance of _____.
23. Define work.
24. Write the equation used to calculate work.
25. What happens to the amount of work done if an object does not move?
26. Potential energy is energy due to an object's _____.
27. Write the equation for gravitational potential energy.
28. Define kinetic energy.
29. Write the equation for kinetic energy.

30. According to the Law of Conservation of Energy, energy cannot be _____ or _____, only _____ from one form to another.

Guided Reading Section 4.3

40. A _____ occurs when two or more objects hit each other.

41. Define an elastic collision.

42. Define an inelastic collision.

43. List the four steps used to analyze collision problems.

1.

2.

3.

4.

44. Why do collisions create forces?

45. Write the impulse equation that relates force, time, and change in momentum.