

NAME _____ DATE _____

Forces and Energy

Chapter 1 Motion

Chapter 1:1: Describing Motion

1. **Direction** - _____

2. **instant** - _____

3. **time** - _____

4. **motion** - _____

5. **reference point** - _____

- Describe how you know if an object is in motion. _____
- It is too difficult to use a moving car as a reference point because it is hard to determine _____
- The best reference point for describing the motion of the planets in our solar system is the _____
- The best reference point for describing when a stationary school bus starts to move is _____.
- Name three reference points that are stationary relative to Earth –

- _____

6. **International System of Units** –

- _____
- o unit for measuring distance - _____
- o 1 meter = _____ millimeters
- o 1 kilometer = _____ meters

7. **Distance** - _____

8. 8. Example: - Mark is sitting in the car. His father is driving him from school to the baseball field. Mark waves as he passes his friend Steve. With respect to Mark;

Objects in motion- _____

Objects not motion - _____

Lesson 2: Speed and Velocity

Motion - _____

Speed - _____

Formula: Speed = _____

SI unit for speed = _____

average speed - _____

Formula: Average Speed = _____

instantaneous speed - _____

Speedometer - _____

Velocity - _____

Slope - _____

Formula: Slope = _____

distance-versus-time graph-

A speed of zero would appear as _____

Distance versus time graph will never show _____

A straight line indicates that _____

Interesting Fact:

- **Michelle ran the 1,000-meter race in 2.5 minutes.**

○ **Formula: Average Speed** = _____

○ **Michelle's Average Speed** = _____ **Average Speed** = _____

Lesson 3: Acceleration

Acceleration - _____

Formula: Acceleration = _____

SI unit for acceleration - _____

Examples:

- If a train is slowing down, it is _____.
- If a Ferris wheel is turning at a constant speed, it is _____.
- If a car's motion is a horizontal line on a speed-versus-time graph, the acceleration is _____.
- If an airplane is accelerating at 8 m/s^2 . Each second its speed increases by _____.
- If an airplane is accelerating at -8 m/s^2 . The distance the airplane travels each second is less than _____.

Formula for Acceleration:

- An airplane flying west at 200 km/h. Two hours later, it is flying west at 300 km/h.
 - o Formula: Acceleration = _____
 - o Formula: Acceleration = _____
 - o Acceleration = _____
- An amusement park ride falls straight down for 4 seconds. During this time, the ride accelerates from a speed of 0 m/s to 40 m/s.
 - o Formula: Acceleration = _____
 - o Formulas Acceleration = _____
 - o Acceleration = _____