

Speed And Velocity Practice Worksheet Questions and Answers PDF

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Part 1: Building a Foundation

What is the primary difference between speed and velocity?	
Hint: Consider the definitions of speed and velocity.	
 A) Speed is a vector quantity, while velocity is a scalar quantity. A) Speed has direction, while velocity does not. C) Speed is a scalar quantity, while velocity is a vector quantity. ✓ D) Speed is always greater than velocity. 	
Speed is a scalar quantity, while velocity is a vector quantity.	
Which of the following are true about speed? (Select all that apply) Hint: Think about the properties of speed.	
 A) It is a scalar quantity. ✓ A) It includes direction. C) It can be measured in m/s. ✓ D) It is calculated as displacement divided by time. 	
Speed is a scalar quantity and can be measured in m/s.	

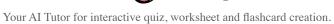
Explain in your own words why velocity is considered a vector quantity.

Hint: Think about the components that define a vector.



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Velocity is considered a vector quantity because it has both magnitude and direction.
List the formulas for calculating speed and velocity.
Hint: Recall the basic formulas used in physics.
1. What is the formula for speed?
Speed = Distance / Time
2. What is the formula for velocity?
Velocity = Displacement / Time
Speed is calculated as distance divided by time, while velocity is calculated as displacement divided by time.
Part 2: Understanding and Interpretation
If a car travels 100 km north and then 100 km south, what is its total displacement?
Hint: Consider the starting and ending points of the car's journey.
○ A) 200 km
○ A) 100 km
○ C) 0 km ✓
○ D) 50 km





The total displacement is 0 km because the car returns to its starting point.
Which scenarios describe velocity rather than speed? (Select all that apply)
Hint: Think about whether direction is included in the description.
☐ A) A car traveling at 60 km/h
☐ A) A plane flying 500 km east ✓
☐ C) A runner moving at 10 m/s north ✓
□ D) A cyclist maintaining a speed of 20 km/h
Velocity includes direction, so scenarios that specify direction describe velocity.
Describe a real-world scenario where understanding the difference between speed and velocity is crucial.
Hint: Think about situations involving navigation or physics.
Understanding the difference is crucial in navigation, where direction affects the outcome.
Part 3: Application and Analysis
A cyclist travels 30 km north in 2 hours. What is the cyclist's average velocity?
Hint: Use the formula for velocity.
O A) 15 km/h north ✓
○ A) 30 km/h north
○ C) 60 km/h north○ D) 15 km/h
The average velocity is 15 km/h north.



A cal travels 130 km in 3 hours. Which of the following statements are true: (Select all that apply)
Hint: Calculate average speed and consider displacement.
☐ A) The average speed is 50 km/h.
☐ A) The average velocity is 50 km/h.
☐ C) The car's displacement is 150 km. ✓
D) The car's speed is a vector quantity.
The average speed is 50 km/h, and the car's displacement is 150 km.
Calculate the average speed of a runner who completes a 400-meter lap in 50 seconds.
Hint: Use the formula for average speed.
The average speed is 8 m/s.
Which graph correctly represents a constant speed over time?
Hint: Think about the shape of the graph.
A) A straight horizontal line on a distance-time graph
O A) A straight diagonal line on a distance-time graph ✓
C) A curved line on a distance-time graphD) A vertical line on a distance-time graph
•
A straight diagonal line on a distance-time graph represents constant speed.
Analyze the following statements and identify which are true about instantaneous speed. (Select all that apply)
Hint: Consider the definition of instantaneous speed.
A) It is the speed at a specific moment in time. ✓A) It is always equal to average speed.



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	D) A boat sailing in a zigzag pattern ✓
	Speed and velocity would differ in scenarios involving changes in direction.
	esign an experiment to measure the average speed and velocity of a remote-controlled car on a ack. Describe the steps and tools you would use.
Hi	nt: Think about the materials needed for the experiment.
I	An experiment could involve timing the car over a set distance and measuring its direction.