



Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

16:3 Two-Column Notes  
"Acceleration"  
Pages 614-619

Problem/Question	Information/Answer
Define acceleration	
What does acceleration refer to in science?	
Give an example of increasing speed	
Give an example of decreasing speed	
Give an example of changing direction	
How do you determine the acceleration of an object moving in a straight line?	
Record the formula for acceleration (using SI units)	
If an object starts out at rest, what is its initial speed?	
A roller coaster starts down a slope at 3 m/s. 7 seconds later its speed is 19 m/s. What is avg acceleration?	
What two graphs can be used to analyze the motion of an accelerating object?	
On a distance vs. time graph, if the slope is decreasing, what is happening to the speed?	
A skier reaches the steepest part of a trail. Her speed	

increases from 8 m/s to 17 m/s in 4 seconds. What is her average acceleration?

What is a race car's average acceleration if its speed changes from 0 m/s to 38 m/s in 5 seconds?

## Calculating Acceleration

1.  $a = \frac{10 \text{ m/s} - 5 \text{ m/s}}{5 \text{ s}}$

2.  $a = \frac{27 \text{ m/s} - 21 \text{ m/s}}{6 \text{ s}}$

3.  $a = \frac{45 \text{ m/s} - 10 \text{ m/s}}{10 \text{ s}}$

4.  $a = \frac{15 \text{ m/s} - 40 \text{ m/s}}{5 \text{ s}}$

5.  $a = \frac{0 \text{ m/s} - 30 \text{ m/s}}{15 \text{ s}}$

6.  $a = \frac{25 \text{ m/s} - 50 \text{ m/s}}{30 \text{ s} - 10 \text{ s}}$

Use the formula for acceleration to find each answer.

7. An object initially at rest accelerates forward in a straight line. It takes the object 7 s to reach a velocity of 42 m/s. What is the acceleration of the object?  
\_\_\_\_\_
8. A radio-controlled airplane has an initial velocity of 38 m/s. Five seconds later it reaches a velocity of 51 m/s. What is the acceleration of the plane?  
\_\_\_\_\_
9. A runner starts moving and reaches a speed of 4 m/s in 2 seconds. What is his acceleration?  
\_\_\_\_\_
10. A ball is moving at 6 m/s. After 4 seconds, it is moving at 1 m/s. What is the acceleration of the ball?  
\_\_\_\_\_
11. A zebra running at 20 m/s slows and comes to a stop in 10 seconds. What is the zebra's acceleration?  
\_\_\_\_\_