

Name : _____ Block: ___ Date: _____

Acceleration Questions

You have the following objective(s) for this assignment:

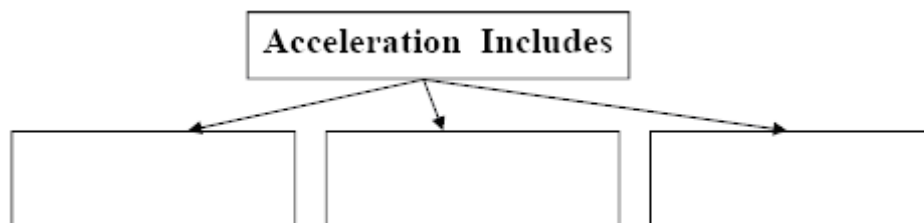
- 3 Define acceleration.
- 4 Predict what effect acceleration will have on motion.

I have prepared this Study Guide to help you learn these objectives. The following break the objectives into smaller questions or tasks. As you do the following, please:

Put the page number where you found the answer in the left margin. This will help you when you go back to study.

THANK YOU

1. What is acceleration?
2. An advertisement for a car states that the car is able to go from 0 to 60 in 8.3 s. What does that mean?
3. What would it mean if the car reached a faster speed in 8.3 s?
4. What would it mean if it took 12 s to reach 60 miles/hour?
5. What do people mean when they say a car has “no acceleration”?
6. Look at Figure 8 (p. 173). **Determine** how the car’s velocity is changing.
7. Distinguish the 3 ways that an object can accelerate. **Complete the concept map.**



8. **Complete** the mathematical equation to calculate acceleration for objects moving in a straight line.

Acceleration Equation:

$$\text{acceleration (in m/s}^2\text{)} = \frac{\text{(in m/s)} - \text{(in m/s)}}{\text{(in s)}}$$

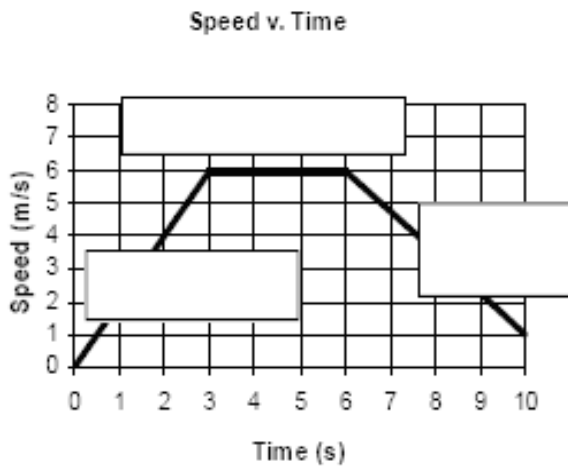
Analyze *the equation above to rewrite it using symbols.*

$$a = \underline{\hspace{2cm}}$$

9. Find the acceleration of a train whose speed increases from 7 m/s to 17 m/s in 120 s.

10. A bicycle accelerates from rest to 6 m/s in 2 s. What is the bicycle's acceleration?

11. Analyze the acceleration graph below. Label the parts of the graph showing **zero acceleration**, **positive acceleration**, and **negative acceleration**.



12. How does a line for positive acceleration slope?

13. How does a line for negative acceleration slope?

14. What does a line for zero acceleration look like?

15. A jogger runs around a circular track. She starts at a speed of 2 m/s, then speeds up to 6 m/s. She runs at that speed for 20 minutes, and then comes to a stop. Describe her acceleration. Is it ever zero?