

$$\text{Acceleration} = \frac{(\text{final velocity} - \text{initial velocity})}{\text{change in time}}$$

1. Which of the following is not example of acceleration?
 - a. A person jogging along a winding path
 - b. A car stopped at a stop sign
 - c. A cheetah that sprints toward prey
 - d. A plane taking off
2. Which of the following are proper units for measuring acceleration?
 - a. meters/second (m/s)
 - b. pounds per square inch (lbs./in²)
 - c. meters per second squared (m/s²)
 - d. pounds per mile per minute (lbs/m/min)

True or false: If false then correct the underlined word.

1. ____ The rate at which velocity changes over time is acceleration? _____
2. ____ If velocity is increasing, then acceleration is positive? _____
3. ____ If velocity is increasing, then acceleration is negative? _____
4. ____ Negative acceleration is also called deceleration? _____

Calculate

5. Mike hikes at a speed of 1km/h but, then gradually speeds up to 5km/h over the course of 2 hours.
Find acceleration:

6. Passengers fly on an airplane which, went from 350km/hr to 650 km/hr in 30minutes time. **30min = 0.5hr**
Find acceleration:

7. The same plane lands 5 hours later. The plane starts slowing down and descends from an altitude of 22,000ft to land safely at sea level. At the start of the descent, it was traveling at 650km/hr. It lands and taxis to a stop all in a span of 45minutes. **Find deceleration (negative answer):**

8. A hockey player deflects and shoots a puck moving toward him at 5m/s. A half second after the slap shot, the puck is moving 15m/s toward the goal. Find acceleration:
9. Bob and his pals rode a roller coaster that went from 120ft/s to 200ft/s in just under 3seconds. Find acceleration:
10. A car speeds along at 55mph. It must brake and slow down because of heavy traffic. The car slows to 25mph over the next 5 minutes of driving. **15 min = 0.25hr Find deceleration (negative answer):**
11. The fast car goes from zero to 60mph in 8 seconds. **8sec = 0.00222hr**
12. What is the acceleration of a subway train that speeds up from 5m/s to 25m/s in 18 seconds between the downtown and uptown stops.