What is Acceleration?

Worksheet

Acceleration is the rate of change of velocity: a = v/t, in m/s. Speeding up, slowing down and changing direction all count.

a = @frac{@Delta v}{@Delta t}

Questions

1. 020 m/s in 5 s. Acceleration?

A) 4 m/s
B) 100 m/s
C) 0.25 m/s
D) 25 m/s

2. Unit of acceleration?

A) m/s
B) m/s
C) m
D) s

3. Negative acceleration means

A) moving backward
B) slowing down
C) zero speed
D) constant speed

4. Circular motion at constant speed

A) zero acceleration
B) is accelerating
C) infinite acceleration
D) no velocity

5. A car speeds up from 10 m/s to 30 m/s in 4 s. Find its acceleration.

6. A cyclist slows from 12 m/s to 0 in 6 s.

7. From rest at 3 m/s for 5 s, final velocity?

8. Define: What is acceleration?

9. Define: Is slowing down acceleration?

10. Define: Unit of acceleration?

Answer Key

1. A) 4 m/s - a = 20/5 = 4 m/s.
2. B) m/s - (m/s)/s = m/s.
3. B) slowing down - It opposes motion slowing down.
4. B) is accelerating - Direction changes acceleration.
5. v = 30 10 = 20 m/s a = v/t = 20/4 = 5 m/s
6. v = 0 12 = 12 m/s a = 12/6 = 2 m/s
7. v = at = 35 = 15 m/s
8. The rate of change of velocity: a = v/t, in m/s.
9. Yes - negative acceleration. Any velocity change counts.
10. Metres per second squared (m/s).