

Name:

Acceleration (Worksheet)

Q.1. What is the definition of acceleration?

Q.2. Write symbol and unit of measure for the following quantities.

Quantity	Symbols	Units
change in velocity		
time taken		
acceleration		

Q.3. Write **T** or **True** if the statement is true; write **F** or **False** if the statement is false.

- _____ 1. Acceleration is a vector quantity.
- _____ 2. If an object has a speed of zero, it has no acceleration.
- _____ 3. If the object moves with a high speed then its acceleration is also high and if the object moves with a low velocity then the acceleration is also low.
- _____ 4. Deceleration, or negative acceleration, is observed when an object slows down.
- _____ 5. If the acceleration is negative, then the object is slowing down, and if the acceleration is positive, then the object is speeding up.
- _____ 6. If an object is moving with a constant velocity, then it has zero acceleration.

Q.4. Acceleration is a measure of the change in velocity over _____.

- a) mass b) force
c) time d) speed

Q.5. Calculate the acceleration of the car in the below.



Q.6. If a car is going 60 m/s and slows down to 20 m/s in 5 seconds, what is the rate of acceleration?

Name:

Q.7. If a car, with an initial velocity of 30 m/s, accelerates at a rate of 20 m/s^2 for 5 seconds, what will its final velocity be?

- a) 100 m/s
- b) 110 m/s
- c) 120 m/s
- d) 130 m/s

Q.8. A motorcycle accelerates at a rate of 4.0 m/s^2 . If its initial velocity is 10 m/s, how many seconds will it take the motorcycle to reach a final velocity of 30 m/s?

- a) 4 seconds
- b) 5 seconds
- c) 6 seconds
- d) 7 seconds

Q.9. The table below includes data for a motion of skater.

Time (seconds)	Velocity (m/s)
0	0
3	6
6	12
9	18



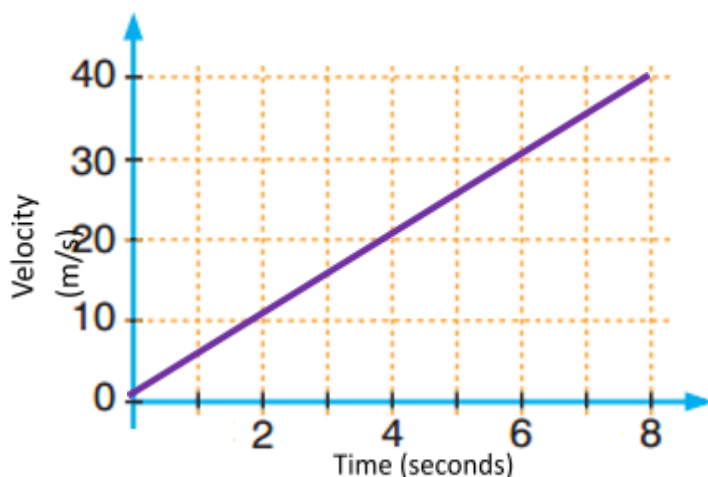
What is the acceleration of this skater?

- a) 2 m/s^2
- b) 3 m/s^2
- c) 4 m/s^2
- d) 5 m/s^2

Q.10. A roller coaster's velocity at the top of a hill is 12 m/s. Four seconds later it reaches the bottom of the hill with a velocity of 24 m/s. What was the acceleration of the coaster?

- a) 2 m/s^2
- b) 3 m/s^2
- c) 4 m/s^2
- d) 5 m/s^2

Q.11. The velocity-time graph in the below shows how the velocity of a train changes during part of a journey.



What is the acceleration of this train?

- a) 2 m/s^2
- b) 3 m/s^2
- c) 4 m/s^2
- d) 5 m/s^2