

NAME :

Date :

Hour :

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Acceleration Calculations

Acceleration means a change in speed or direction. It can also be defined as a change in velocity per unit time.

Calculate the acceleration for the following data. SHOW WORK!

	<u>Initial Velocity</u>	<u>Final Velocity</u>	<u>Time</u>	<u>Acceleration</u>
1.	0m/s	24 m/s	3 s	_____
2.	0 m/s	35 m/s	5 s	_____
3.	20 m/s	60 m/s	10 s	_____
4.	50 m/s	150 m/s	5 s	_____
5.	25 m/s	1200 m/s	3600 s	_____

6. A car accelerates from a standstill to 60 m/s in 10 seconds. What is the acceleration?

7. A car accelerates from 25 km/hr to 55 km/hr in 30 seconds. What is its acceleration?

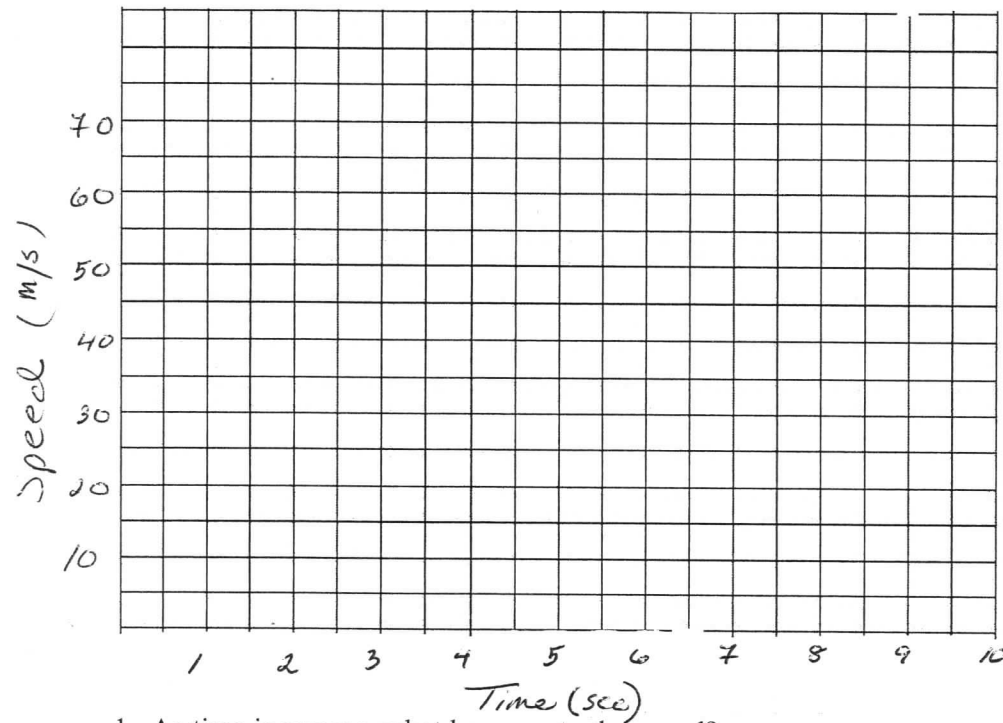
8. A train is accelerating at a rate of 2 m/s. If its initial velocity is 20 m/s, what is its velocity after 30 seconds?

9. A runner achieves a velocity of 11.1 m/s, 9 sec after he begins. What is his acceleration? What distance did he cover?

Graphing Velocity vs Time

Plot the following data on the graph and answer the questions below. SHOW WORK IF APPLIES!

Speed (m/s)	Time (sec)
0	0
10	2
20	4
30	6
40	8
50	10

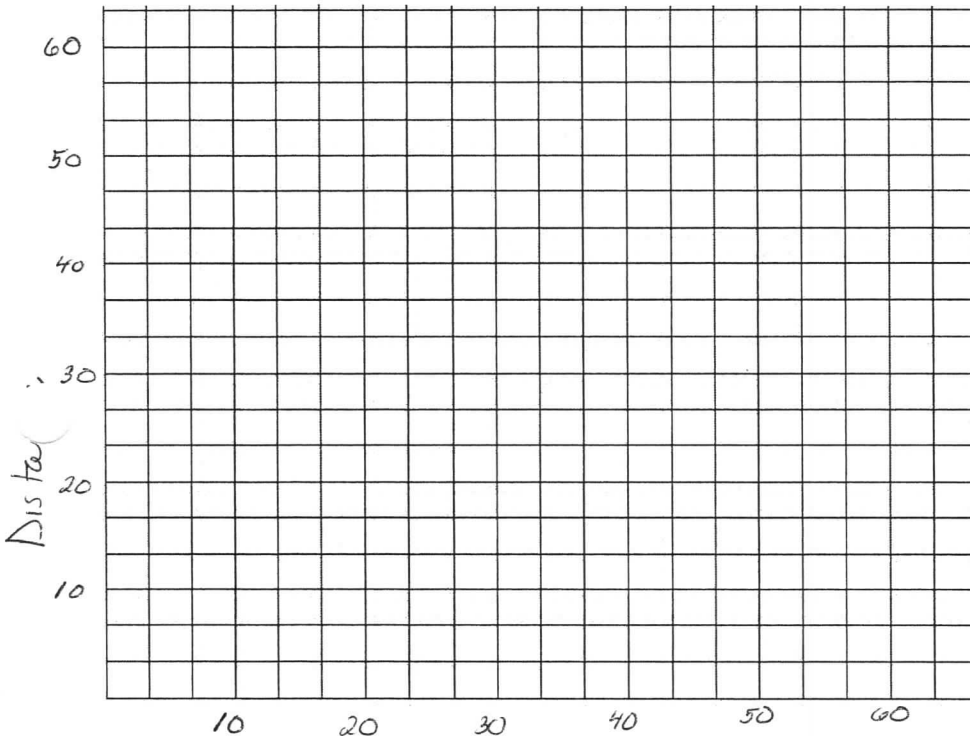


1. As time increases, what happens to the speed? _____
2. What is the speed at 5 seconds? _____
3. Assuming constant acceleration, what would be the speed at 14 seconds? _____
4. At what time would the object reach a speed of 45 m/s? _____
5. What is the object's acceleration? _____
6. What would the shape of the graph be if a speed of 50 m/s is maintained from 10s to 20 s?
7. Based on the information in Problem 6, calculate the acceleration from 10 s to 20 s.
8. What would the shape of the graph be if the speed of the object decreased from 50 m/s at 20 s to 30 m/s at 40 s?

Graphing Distance vs. Time

Plot the following data on the graph and answer the following questions below. SHOW WORK IF APPLIES!

Distance (m/s)	Time (s)
0	0
5	10
12	20
20	30
30	40
42	50
56	60



1. What is the average speed at 20 s? _____
2. What is the average speed at 30 s? _____
3. What is the acceleration between 20 and 30 s? _____
4. What is the average speed at 40 s? _____
5. What is the average speed at 60 s? _____
6. What is the acceleration between 40 and 60 s? _____
7. Is the object accelerating at a constant rate? _____