

Total time: 1 hr Total Points: 10 pt**Student Name:**

Answer the questions in the spaces provided on the question sheets. If you run out of room for an answer, continue on the back of the page.

1. Convert velocity of 25 mph in m/s.

Solution: 11.2 m/s

2. Convert the acceleration of 1.2 m/s^2 into mi/s^2 .

Solution: 0.0007 mi/s^2

3. The acceleration of an object is 12.5 m/s^2 . Write down the acceleration in ft/s^2 .

Solution: 41.0 ft/s^2

4. You measure the width of an element to be 0.00304 meters. Write the measurement in the scientific notation.

Solution: $3.04 \times 10^{-3} \text{ m}$

5. You measure the width of an element to be 4,875 meters. Write the measurement in the scientific notation.

Solution: $4.875 \times 10^3 \text{ m}$

6. You measure the width of an element to be 343.5 meters. Write the measurement in the scientific notation.

Solution: $3.435 \times 10^2 \text{ m}$

7. Write the following number 7.83×10^4 in in a decimal notation.

Solution: 78300 in

8. Write the following number 1.20×10^{-3} in in a decimal notation.

Solution: 0.00120

9. Determine the power of ten for the number 0.001.

Solution: -3

10. Determine the power of ten for the number 10,000

Solution: 4

11. How many significant digits are there in 3.40×10^4 ?

Solution: 3

$$\text{speed} = \frac{\text{distance}}{\text{time}} \quad \text{acceleration} = \frac{\text{change in velocity}}{\text{time}}$$
$$\text{speed} = \text{initial speed} + \text{acceleration} \times \text{time}$$

12. You drive at 30 mph for 1.5 hr. How far did you travel?

Solution: 45 mi

13. How long will it take you to travel 200 mi if you maintain a constant speed of 65 mph?

Solution: 3.08 h

14. If your car change its velocity from 0 to 7.5 m/s in 3.0 seconds, how much was its acceleration?

Solution: 2.5 m/s²

15. You are driving at 20 m/s (about 45 mph) and you want to increase the speed to 30 m/s (about 65 mph) . You press the gas pedal and the car begins to accelerate at 2.0 m/s^2 . What is your speed after 2.0 seconds?

Solution: 24 m/s

16. You drop a stone from a bridge. How much is its speed after 5 s?

Solution: 49 m/s