**Constant Acceleration Model Worksheet 1b**

**Two New Scenarios**

**Scenario 1**

|  |  |
| --- | --- |
| Time (s) | Position (cm) |
| 0 | 80 |
| 1 | 78 |
| 2 | 72 |
| 3 | 62 |
| 4 | 48 |
| 5 | 30 |
| 6 | 8 |

1. Plot a position vs. time graph for this data.
2. What is happening to the position of this object over time? Be specific.
3. Draw a secant line through the t=0 and t = 6 points. What is the slope of this line?
4. What does the slope of this line MEAN in terms of the motion of this object?
5. Calculate the average velocity of the object for each second interval.

0-1 s = \_\_\_\_\_ 1-2 s = \_\_\_\_\_ 2-3 s = \_\_\_\_\_

3-4 s = \_\_\_\_\_ 4-5 s = \_\_\_\_\_ 5-6 s = \_\_\_\_\_

1. Plot a velocity vs. time graph for the object.
2. What does the slope/constant of the v vs. t graph tell you about the object? Be specific.

**Scenario 2**

|  |  |
| --- | --- |
| Time (s) | Position (cm) |
| 0 | 30 |
| 1 | 70 |
| 2 | 100 |
| 3 | 120 |
| 4 | 135 |
| 5 | 145 |

1. Plot a position vs. time graph for this data.
2. What is happening to the position of this object over time? Be specific.
3. Draw a secant line through the t=0 and t = 1 points. What is the slope of this line?
4. Draw a secant line through the t = 5 and t = 6 points. What is the slope of this line?
5. What does the slope of these lines tell you about the motion of this object?
6. Calculate the average velocity of the object for each second interval.

0-1 s = \_\_\_\_\_ 1-2 s = \_\_\_\_\_ 2-3 s = \_\_\_\_\_

3-4 s = \_\_\_\_\_ 4-5 s = \_\_\_\_\_

1. Plot a velocity vs. time graph for the object. Assume the object started with a velocity ≠ 0 cm/s.
2. What does the slope/constant of the v vs. t graph tell you about the object? Be specific.