**Graphs and Motion Maps of Accelerated Objects**

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| **Increasing speed in the positive direction** |
| Think about the cart as it rolls down the incline starting from rest  |
| Draw a motion map. Include velocity and acceleration vectors \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_>Is the velocity positive or negative? Is the acceleration positive or negative? |
| Predict the graphs describing the motion | The slope of the position vs time graph is (constant/ increasing/ decreasing) and (positive/ negative) and represents \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_The slope of the velocity vs time graph is (constant/ increasing/ decreasing) and (positive/ negative) and represents \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| **Decreasing speed in the positive direction** |
| Think about the cart as it rolls up the incline after a pushOnly consider the motion up thee ramp until the cart stops |
| Draw a motion map. Include velocity and acceleration vectors \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_>Is the velocity positive or negative? Is the acceleration positive or negative? |
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| **Increasing speed in the negative direction** |
| Think about the cart as it rolls down the incline toward the origin |
| Draw a motion map. Include velocity and acceleration vectors \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_>Is the velocity positive or negative? Is the acceleration positive or negative? |
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| **Decreasing speed in the negative direction** |
| Think about the cart as it rolls down the incline toward the origin |
| Draw a motion map. Include velocity and acceleration vectors \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_>Is the velocity positive or negative? Is the acceleration positive or negative? |
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| **Up and Down the ramp** |
| Think about the cart as it rolls down the incline toward the origin |
| Draw a motion map. Include velocity and acceleration vectors \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_>Is the velocity positive or negative? Is the acceleration positive or negative? |
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| **Up and Down the ramp passing the origin twice** |
| Think about the cart as it rolls down the incline toward the origin |
| Draw a motion map. Include velocity and acceleration vectors \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_>Is the velocity positive or negative? Is the acceleration positive or negative? |
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