**2.4 Quizlette – Free Fall (Red Elk) Name**

Ignore air friction and use the convention that **down is negative.** g = 9.8 m/s/s

1. **An air rocket is launched from the ground straight up, and on the way down is strikes a light tower that is 23.0 m tall with a downward velocity of 11.0 m/s**. What was its initial upward velocity?

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| X = Vi =Vf =a =t = |  | Formula |  |
| Show your steps |

2. **An air rocket is launched straight up at 31.0 m/s.**  What time elapses between the launch, and the point on the way down where it has a downward velocity of 17.0 m/s?

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| X = Vi =Vf =a =t = |  | Formula |  |
| Show your steps |

3. **An air rocket is launched straight upwards at 26.0 m/s.** What is its velocity at a time of 4.80 s?

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| X = Vi =Vf =a =t = |  | Formula | 1) +23.9 m/s 2) 4.90 s 3) -21.04 m/s 4) -14.94 m/s |
| Show your steps |

4. **An air rocket is launched straight up with a speed of 24.0 m/s and strikes a 18.0 m tall light tower**

 **on the way down.** What is the velocity of impact with the light tower?

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| X = Vi =Vf =a =t = |  | Formula |  |
| Show your steps |