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?

$X =$
$V_i =$
$V_f =$
$a =$
$t =$

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?

$X =$
$V_i =$
$V_f =$
$a =$
$t =$

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?

$X =$
$V_i =$
$V_f =$
$a =$
$t =$

Formula

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?

$X =$
$V_i =$
$V_f =$
$a =$
$t =$

Formula

Show your steps