The following is a selection of questions from the various units during the year. Enjoy!!!

1. A car accelerates from $12 \mathrm{~m} / \mathrm{s}$ to $20 \mathrm{~m} / \mathrm{s}$ in 4 seconds.
a. What is the car's acceleration?
b. How far does the car travel over the 4 second period of time?
c. What is the car's final speed in $\mathrm{km} / \mathrm{hr}$ ?
2. A penny is dropped from the top of a tall building. Sam counts to 4 seconds before he hears the penny hit the ground below.
a. Help Sam estimate the height of the building he is on?
b. Would the actual measured height of the building be greater or less than Sam's estimated value? Justify your decision.
3. A potato launcher flings an edible missile into the air with an initial speed of $18 \mathrm{~m} / \mathrm{s}$ and at an angle of 35 degrees to the ground.
a. If the potato starts on the ground, how far down the field did it travel?
b. To increase the range of the potato launcher, Joe wants to raise the launcher off the ground by 1.5 m while Pat wants to change the angle of trajectory to 45 degrees. Whose change, Joe or Pat's, will result in the greatest increase in range?
