

# AP Physics – Great, More Homework – 3

What you are called \_\_\_\_\_ Per \_\_\_\_

*Computers in the future may weigh no more than 1.5 tons.* -- Popular Mechanics, 1949

1. A race car accelerates at a rate of  $15.6 \text{ m/s}^2$ . If it starts from rest, how much time till it is traveling at  $325 \text{ km/h}$ ?
2. A truck falls off a cliff. If the cliff is  $33.5 \text{ m}$  high, how much time for the truck to reach the bottom?
3. You toss a ball straight up in the air, it goes up, comes down, and you catch it. If it took  $5.6 \text{ s}$  from when you threw it to when you caught it, how high did it go?
4. The speed of sound is  $344 \text{ m/s}$ . You have built a really fantastic car that can really go fast. If the car can accelerate at  $22.4 \text{ m/s}^2$ , how much time till you reach the speed of sound? How many kilometers will you travel before you reach that speed?

