

Proper Form For Problems

- *Use GRS (given, required, solution) -- make sure vector quantity symbols have arrows
- *Make a diagram! They are always useful and can be used for given information instead of listing.
- *Include the appropriate equation
- *Carry units (useful strategy for advanced problems), cancelled units give the final unit
- *State answers with the correct unit, sig digs and direction if required

Note: Given, required, solution is not necessary in certain contexts.

**Finding slope on a graph*

**Conversions ex. mass to weight*

Sample Problem

A bullet travels 45 ms before striking a tree 60.0 m away. Find its speed.

G: $t = 45 \text{ ms} = 0.045 \text{ s}$
 $d = 60.0 \text{ m}$

Do conversions in given information

R: v_{av}

S: $v_{av} = d / t$ **Start with the equation and rearrange if needed.**

$$v_{av} = \frac{60.0 \text{ m}}{0.045 \text{ s}}$$

Carry units -- cancel units to final unit.

For this problem, no units cancel, so the final unit is m/s

$$= 130 \text{ m/s}$$

Check the answer ---

sig digs? unit? direction if required?

****Does the answer seem reasonable?**

It is important to ensure that the answer you got makes sense!!

5599990000000000 m/s, faster than the speed of light, does not make sense for this problem!