**Describing Motion Using Equations**

We’ve already learned that speed is how fast an object is moving.

Average Speed, is: V*av* , $Δd$

Distance travelled is : $Δd$

Time Interval is : $Δt$

 V = $Δd$ V $Δt$

 $Δt$

For example:

Calculate the average speed of a car that travels from Prince Albert to Saskatoon (141 km) in 1.25 hours.

Solution:

v= ? v = d = 141km = 112.8km/hr………**113km/hr**

d=141 km t 1.25 hrs

t= 1.25 hrs

Problem Solving

* Sometimes, it will be difficult to figure out what the question is asking you to find.
* In these instances, it is helpful to use the GRASP method of problem solving.

**G** **Given**: Identify the information that is **GIVEN** in the problem statement.

**R** **Required**: Identify the information that is **REQUIRED**. (What are you trying to determine?)

**A** **Analyse**: (figure out) which equation, rule or principle applies to this type of problem. (Use the triangle…cover up the variable that you are not given)

**S** **Substitute** and **Solve**: If using an equation, \_PUT IN \_ the values given in the problem for the appropriate variables and then \_SOLVE\_the equation.

**P** **Paraphrase**: write your answer in a brief sentence that answers the problem.

Converting between m/s and km/h

* To convert from km/h to m/s
	+ Change km to m: 1 km = 1000 m
	+ Change h to s: 1 h = 3600 s
* Therefore multiply by 1000 and divide by 3600
	+ - * + or
* Divide the speed in km/h by 3.6 to obtain the speed in m/s.

For example, convert 75 km/h to m/s.



For example: 1. Convert 95 km/h to m/s.

Solution:

For example: 2. A truck’s displacement is 45 km north after driving for 1.3 hours. What was the truck’s average velocity in km/h & m/s?

Solution: