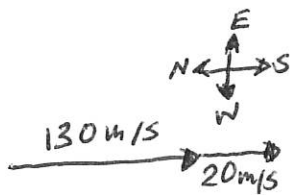


August 29 & 30 2019

Entry:



Tail wind means in the same direction of the plane

$$130 \text{ m/s} + 20 \text{ m/s} = 150 \text{ m/s} \leftarrow \text{Actual speed of the plane}$$

Bonus:

$$650 \text{ km} = 650,000 \text{ m}$$

$$\frac{650,000 \text{ m}}{150 \text{ m/s}} = 4,333 \frac{1}{3} \text{ s}$$

### Class Definition of Energy

Change or transfer of Energy / something

### Physics Definition

Ability OR Potential to do Work

Very unsatisfying!

### Remodel Cup

How you should have a model of your cup and ice system with Energy taken into account. (class has 2 models)

### Density

$$\rho = \frac{m}{V}$$

mass  
Volume

units  $\rightarrow$  g/cm<sup>3</sup>, kg/m<sup>3</sup> etc.

Density symbol " $\rho$ " rho

Density is how much "stuff" is in a given volume

### Energy and Phase Changes

Gas $\rightarrow$ Liquid	condensing	- Energy
Liquid $\rightarrow$ Gas	evaporating	+ Energy
Liquid $\rightarrow$ Solid	freezing	- Energy
Solid $\rightarrow$ Liquid	melting	+ Energy
Solid $\rightarrow$ Gas	sublimating	+ Energy
Gas $\rightarrow$ Solid	deposition	- Energy

Water is the only substance whose solid phase is less dense than the liquid phase. Allows ice to float on liquid water. This is due to Hydrogen Bonding.