

## **Multiplying/Dividing Integers**

**Here's a new agreement, a new model for multiplication and division.**

**Traveling east (right) is positive, traveling west (left) is negative.**

**Future time will be defined as positive, past time as a negative number.**

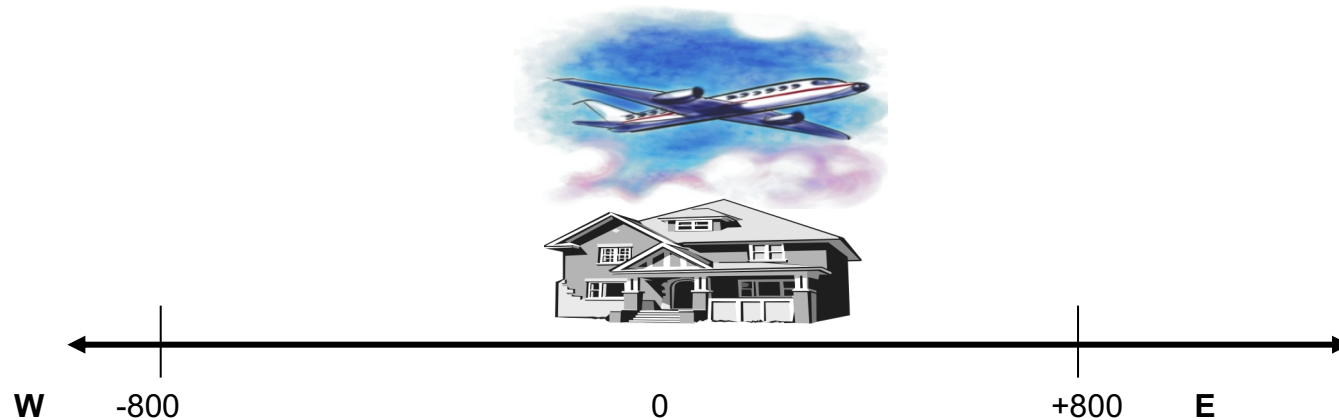
**And you'll be at your lovely home which will be designated as zero.**

### **Example**

**If you were at home (at zero) and a plane heading east at 400 mph passed directly overhead, where will it be in 2 hours?**

**If you don't know that distance equals rate x time, now you do;  $d = rt$**

**Translating English to math, going 400 mph East is +400, and since we are looking at future time, 2 hours will be +2.**



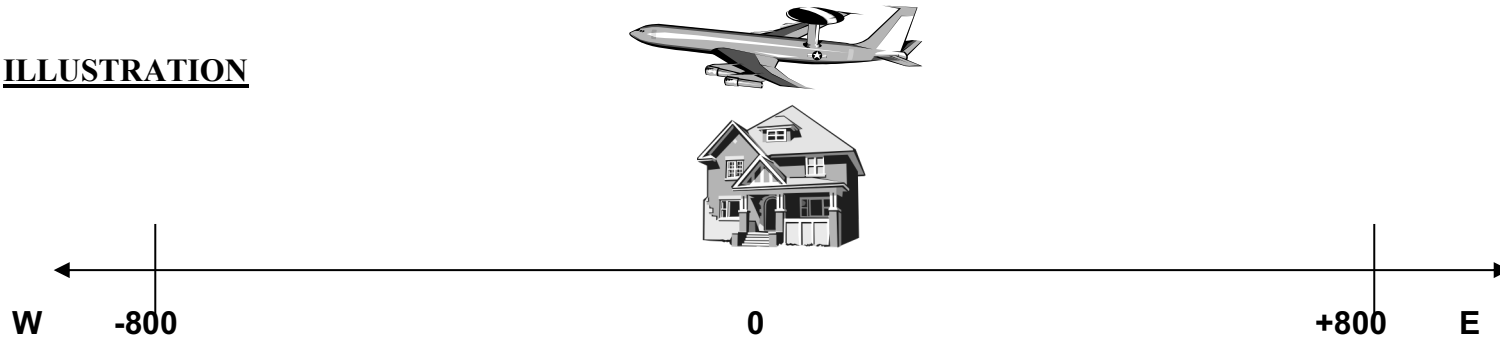
Mathematically, we have  $d = rt$

$$\text{Distance} = 400 \text{ mph east} \times 2 \text{ hrs future} = 800 \text{ miles east}$$

$$\begin{array}{ccccccc} D & = & r & \times & t & & \\ & & (+400) & \times & (+2) & = & +800 \end{array}$$

## Example

### ILLUSTRATION



The plane is heading west at 400 mph ( $-400$ ), where was it 2 hours ago ( $-2$ ) if it is directly over your home now?

Translating English to math we have:  $d = rt$

400 mph west x 2 hours past = 800 miles east

$(-400) \times (-2) = +800$

