

In this section we will deal with 4 types of word problems:

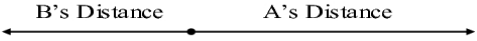
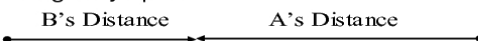
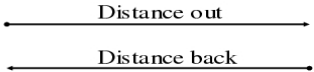
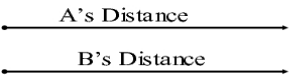
- Uniform Motion Problems
- Simple Interest Problems
- Mixture Problems
- Work Problems

Each type has its own principles used to solve it. When solving, make sure and determine the type and use the relevant principles.

**Uniform Motion Problems**

Uniform motion is a term used when the speed at which you travel remains constant. The principles used are Distance = Rate \* Time (i.e.  $20 \frac{\text{miles}}{\text{hour}} * 5 \text{ hours} = 100 \text{ miles.}$ )

Suppose there are two cars A and B. There are four possibilities:

<ul style="list-style-type: none"> <li>• <i>A and B leave the same place going in the opposite direction</i>                      The distance traveled by A plus the distance traveled by B is the distance they are apart.</li> </ul> 	<ul style="list-style-type: none"> <li>• <i>A and B leave a different place going toward each other.</i>                      The moment they meet, the distance traveled by A plus the distance traveled by B is equal to the distance they were originally apart.</li> </ul> 
<ul style="list-style-type: none"> <li>• <i>A travels from a point and returns to the same point.</i>                      The distance on the outgoing trip equals the distance on the return trip.</li> </ul> 	<ul style="list-style-type: none"> <li>• <i>A and B leave the same point at the same time traveling in the same direction at different speeds.</i>                      At the instance one overtakes the other, their distances are the same.</li> </ul> 

EXAMPLE: A family drove to a beach resort at an average speed of 44 mph and later returned over the same road at an average speed of 55 mph. Find the distance to the resort if the total driving time was 9 hours.

- 1.) Make a chart.
- 2.) Fill in for the rate and time.
- 3.) Use  $D = R \cdot t$  to find the distances.
- 4.) See which case you have to make an equation.

	r	t	D
out	44	t	
back	55		