Only to be used for arranged hours

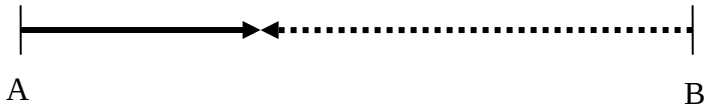
Math 31 Uniform Motion Activity 14

Name:_____

Objects (cars, trains, planes, bicyclists, joggers) move at a constant rate in a constant direction.

The formula is rate $\times$ time = distance, $r \bullet t = d$

CASE 1: Two Objects Moving Toward One Another

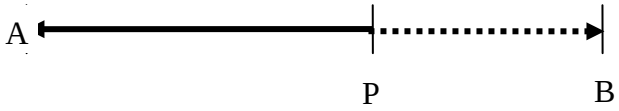


The sum of the distances traveled is equal to the total distance from point A to point B.

Problem: At 12 PM, a car leaves city A at 60 miles per hour and at the same time a bus leaves city B at 40 miles per hour. The distance between the cities is 50 miles. At what time will the car and bus meet?

Answer: 12:30 PM

CASE 2: Two Objects Moving Away From One Another



The sum of the distances traveled is equal to the total distance from point A to point B.

Problem: Two bicyclists leave the same point, P, traveling in opposite directions at 10 mph and 15 mph.
How long will it take for them to be 125 miles apart?
Answer: 5 hours

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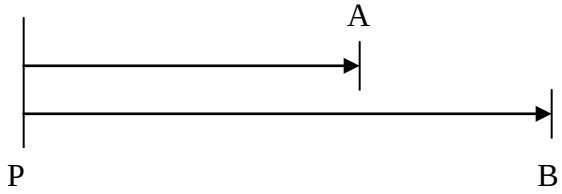
Uniform Motion

Objects (cars, trains, planes, bicyclists, joggers) move at a constant rate in a constant direction.

The formula is rate $\times$ time = distance, $r \bullet t = d$

CASE 3: Two Objects Moving In The Same Direction

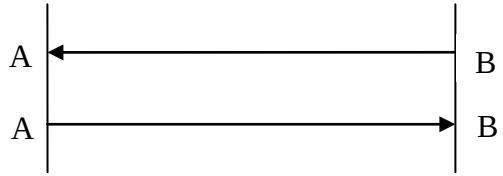


The greater distance traveled minus the lesser distance traveled equals their distance apart.

Problem: A jogger and a walker leave the same point, P, at 8 AM. The jogger's rate is twice the walker's rate. At 11 AM, their distance apart is twelve miles. Find their walker's and jogger's rate.

Answer: Walker's rate is 4 mph and the jogger's rate is 8 mph.

CASE 4: The "Round-Trip"



The distance traveled from point A to point B is equal to the distance traveled from point B back to point A.

Problem: A car travels from Los Angeles to San Diego with traffic, at 30 mph. With no traffic, the car returns at 60 mph in half the time. The total distance traveled is 240 miles. Find the total travel time.

Answer: 4 hours