

2.4 Distance Word Problems

$$d = r t$$

set up charts:

r	t	d
~~~~~		
~~~~~		

$r \leftarrow$ rate (speed)
 $t \leftarrow$ time
 Fill in with information from the reading
 NOT FOUND in reading Use $d = r t$

**Clarify the relationship of the distances

Combine to be a total \rightarrow add

Page 1

1. Sabrina drove from her home to her mother's home, which is 150 miles away. For the first half hour, she drove on local roads. For the next two hours she drove on an interstate highway and increased her average speed by 15 miles per hour. Find Sabrina's average speed on the local roads and on the interstate highway.

	r	t	d = r t
local	x	0.5	$0.5x$
interstate	$x+15$	2	$2(x+15)$

$d_{\text{local}} + d_{\text{interstate}} = 150$
 $0.5x + 2(x+15) = 150$
 $0.5x + 2(x) + 2(15) = 150$
 $0.5x + 2x + 30 = 150$
 $2.5x + 30 = 150$
 $2.5x = 150 - 30$
 $2.5x = 120$
 $x = \frac{120}{2.5}$
 $x = 48$

local	interstate
x	$x+15$
48	$48+15$
	63

local roads 48 mph
 interstate 63 mph

Page 2

2. Two trains traveled in opposite directions from the same starting point. The rate of one train was 20 km/hr faster than the rate of the other. After 2 hours, they were 360 km apart. Find the rate of each train.

let $x =$ rate Train 1
 $x+20 =$ rate Train 2

	r	t	d
Train 1	x	2	$2x$
Train 2	$x+20$	2	$2(x+20)$

$$d_{\text{Train 1}} + d_{\text{Train 2}} = 360$$

$$2x + 2(x+20) = 360$$

$$2x + 2(x) + 2(20) = 360$$

$$2x + 2x + 40 = 360$$

$$4x + 40 = 360$$

$$4x = 360 - 40$$

$$4x = 320$$

$$x = \frac{320}{4}$$

$$x = 80$$

Train 1	Train 2
x	$x+20$
80	$80+20$
	100

Train 1 = 80 km/hr
 Train 2 = 100 km/hr

Page 3

HOMEWORK

Worksheet - HW 2.4 Distance Problems

Page 4