

Homework

Motion Word Problems

Name: Key
Alg. 1 H - Date: Oct. 23 / Glue this foldable on page 76



Directions: Fill in the table. Write the Equations for all of the questions. Solve for #s 5, 7, & 8 ONLY in your notebook on pages 77.

1.) Saratoga and New York are 180 miles apart. A truck traveled from New York toward Saratoga at the rate of 65 miles per hour. Another truck traveled from Saratoga toward New York at the rate of 55 miles per hour. How many miles did each travel before they met?

	Rate (mph)	Time (hr)	Distance (mi)
Truck 1	65	x	$= 65x$
Truck 2	55	x	$= 55x$

Equation: $65x + 55x = 180$

Answer: Truck 1's distance is _____ mph and truck 2's distance is _____ mph

2) Two planes started at the same time from the same airport and flew in opposite directions. One flew 60 miles per hour faster than the other. In 5 hours, they were 5,300 miles apart. Find the rate of each plane.

	Rate	Time	Distance
Slow Plane	x	5	$= 5x$
Fast Plane	$x + 60$	5	$= 5(x + 60)$

Equation: $5x + 5(x + 60) = 5300$

Answer: The slow plane's rate is _____ mph and the fast plane's rate is _____ mph

3) Two trains started from the same station at the same time and traveled in opposite directions. After traveling 10 hours, they were 1,400 miles apart. The rate of the fast train exceeded the rate of the slow train by 5 miles per hour. Find the rate of each train.

	Rate	Time	Distance
Fast Train	$x+5$	10	$= 10(x+5)$
Slow Train	x	10	$= 10x$

Equation: $10(x+5) + 10x = 1400$

Answer: Rate of slow train is _____ mph. Rate of fast train is _____ mph

4) Two trains started from the same place at the same time and traveled in opposite directions at rates that differed by 20 miles per hour. In 5 hours, they were 650 miles apart. Find the rate of each train.

	Rate	Time	Distance
Train 1	x	5	$= 5x$
Train 2	$x-20$	5	$= 5(x-20)$

Equation: $5x + 5(x-20) = 650$

Answer: The rate of train 1 is _____ mph and the rate of train 2 is _____ mph

5) The length of a rectangle is 5 less than twice the width. If the length is increased by 7 in and the width is decrease by 2 in, the perimeter will be 54 in. Find the dimensions of the original rectangle.

orig x new $x-2$
 $2x-5$ $2x-5+7 = 2x+2$
 $P = 2L + 2W$

Equation: $54 = 2(2x+2) + 2(x-2)$

6) Two planes left at the same time from two airports which were 4,500 miles apart and flew toward each other. In 5 hours, they passed each other. The rate of the fast plane was twice the rate of the slow plane. Find the rate of each plane.

	Rate	Time	Distance
Fast Plane	$2x$	5	$= 5(2x) = 10x$
Slow Plane	x	5	$= 5x$

Equation: $10x + 5x = 4500$

Answer: Rate of slow plane is _____ mph. Rate of fast plane is _____ mph.

7) A collection of nickels and quarters amounts to \$2.60. There are 16 coins in all. How many of each coin are there?

Type of coin	Value of each coin In cents	# of coins	total
Nickels	5	x	$= 5x$
Quarters	25	$16-x$	$= 25(16-x)$

Equation: $5x + 25(16-x) = 260$

8) Find three consecutive integers such that the sum of twice the smallest and 3 times the largest is 126.

Let 1st CI = x

2nd CI = $x+1$

3rd CI = $x+2$

Equation: $2x + 3(x+2) = 126$