Name _____

Date _____ Period _____

Show a complete solution for each problem.

1. Mr. James drove his car from San Francisco to San Diego at an average rate of 50 miles per hour and returned at an average rate of 60 miles per hour. Find his time going and returning if the time returning was one hour less than the time going.

   t = time going
   $t - 1$ = time returning

   distance going = distance returning
   $$50t = 60(t-1)$$
   $$50t = 60t - 60$$
   $$10t = 60$$
   $$t = 6 \qquad t - 1 = 5$$

2. Marilyn drove her car from Amarillo to Dallas at an average rate of 55 miles per hour and returned over icy roads averaging only 30 miles per hour. Find the time going and returning if the time returning was 4 hours more than the time going.

3. Two freight trains started at the same time from towns 564 miles apart and met in six hours. The average rate of one train was 14 miles per hour faster than that of the other train. Find the rate of each train.

4. Two passenger trains started at the same time from towns 608 miles apart and met in 4 hours. The rate of one train was 8 miles per hour slower than that of the other. Find the rate of each train.

5. Jose left Westcliffe on his bicycle riding at an average rate of 8 miles per hour five hours before his father left by automobile. The father overtook Jose in exactly one hour. At what average rate was Jose's father traveling?

6. Lysa left camp on her bicycle at noon and rode at an average rate of 10 miles per hour. Morton left camp in his van at 1:30 P.M. and overtook Lysa in 30 minutes. At what average rate was he traveling in the van?

7. Maya averaged 16 miles per hour in a boat traveling downstream and 6 miles per hour traveling upstream. She traveled a total of 44 miles spending as much time going downstream as upstream. How long did she spend going in each direction?

8. Norman started across a lake 10 miles wide in his fishing boat at 12 miles per hour. After his motor went out, he had to row the rest of the way at only 3 miles per hour. If he was rowing for half the time that the total trip took, how long did the total trip take?

     Developing Skills in Algebra   Book A

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1. Mr. Howard drove his car from Los Angeles to Sacramento at an average rate of 52 miles per hour and returned at an average rate of 57 miles per hour. Find his time going and returning if the time returning was one hour less than the time going.

$t = $ time going

$t - 1 = $ time returning

distance going = distance returning

$52\,t = 57(t - 1)$
$52t = 57t - 57$
$5t = 57$
$t = 11.4 \qquad t - 1 = 10.4$

2. Marilyn drove her car from Lubbock to Houston at an average rate of 48 miles per hour and returned over icy roads averaging only 28 miles per hour. Find the time going and returning if the time returning was 5 hours more than the time going.

3. Two freight trains started at the same time from towns 448 miles apart and met in 8 hours. The average rate of one train was 19 miles per hour faster than that of the other train. Find the rate of each train.

4. Two passenger trains started at the same time from towns 288 miles apart and met in 3 hours. The rate of one train was 6 miles per hour slower than that of the other. Find the rate of each train.

5. Albert left Westcliffe on his bicycle riding at an average rate of 10 miles per hour three hours before his son left by automobile. The son overtook Albert in exactly 30 minutes. At what average rate was Albert's son traveling?

6. Sue left camp on her bicycle at 2 P.M. and rode at an average rate of 8 miles per hour. Tom left camp in his van at 3:30 P.M. and overtook Sue in 15 minutes. At what average rate was he traveling in the van?

7. Ty averaged 13 miles per hour in a boat traveling downstream and 7 miles per hour traveling upstream. He traveled a total of 60 miles spending as much time going downstream as upstream. How long did he spend going in each direction?

8. David started across a lake 15 miles wide in his fishing boat at 10 miles per hour. He had to row the rest of the way at only 5 miles per hour after his motor went out. If he was rowing for half the time that the total trip took, how long did the total trip take?