Solving Rational Equations Word Problems   Name: _____ A#_____

Example One: The aerodynamic covering on a particular bicycle increases a cyclist's average speed by 10mi/h. The time for a 75-mi trip is reduced by 2 hours. What is the average speed for the trip using the aerodynamic covering?

Relate: Speed w/ aerodynamic covering = speed without covering + 10
Set up equation and solve:

	Distance (mi)	Time (h)	Rate/Speed (mi/h)
Without Covering	75	t	$\dfrac{75}{t}$
With Covering	75	$t-2$	$\dfrac{75}{t-2}$

Example Two: Tim can stuff envelopes three times as fast as his daughter Georgia. They have to stuff 5000 envelopes for a fund-raiser. Working together, Tim and Georgia can complete the job in about four hours. How many hours would it take each of them working alone?
Relate:

Set Up Equation and Solve:

	Time (hr)	Rate (envelopes per hour)
Georgia		
Tim		
Together		

Example Three: Bethany has scored 10 free throws out of 18 tries. She would really like to bring her free throw average up to at least 68%. How many consecutive free throws would she need to score in order to bring up her average to 68%?

Example Four: $\dfrac{5}{2x-2} = \dfrac{15}{x^2-1}$. Check your solution(s).

Practice:

1. Suppose Adrian can weed the garden twice as fast as his son Phillip. Together they can weed the garden in 3 hours. How long would it take each of them working alone?

2. Carlos can travel 40 miles on his motorbike in the same time it takes Paul to travel 15 miles on his bicycle. If Paul rides his bicycle 20 mi/h slower than Carlos rides his motorbike, find the speed for each bike.

3. One pump can fill a tank with oil in 4 hours. A second pump can fill the same tank in 3 hours. If both pumps are used at the same time, how long will they take to fill the tank?

4. On the first four tests of the term, your average is 84%. You think you can score 96% on each of the remaining tests. How many consecutive test scores of 96% would you need to bring your average up to 90% for the term?

5. Anita and Fran have volunteered to contact every member of their organization by phone to inform them of an upcoming event. Fran can complete the calls in six days if she works alone. Anita can complete the calls in four days. How long will they take to complete the calls if they work together?

6. $\dfrac{1}{5x} = \dfrac{1}{9x}$

7. $\dfrac{2}{x-1} = \dfrac{x+4}{3}$

8. $\dfrac{3}{x-1} = \dfrac{1}{x^2-1}$

9. $\dfrac{2}{3x-5} = \dfrac{4}{x-15}$